IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

This PHOTOFACT Folder Set is

WIRE-SEALED FOR YOUR PROTECTION

to guarantee completeness of contents

DO NOT ACCEPT IF SEAL HAS BEEN BROKEN

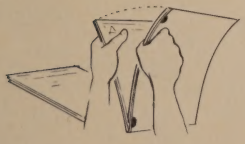
TO OPEN ***JUST DO THIS:***

1

Take hold of the Set with both hands. Place your thumbs directly under the top wire-seal; then, divide the contents equally by putting your thumbs midway through the thickness of the Set. Now, pull the two sections apart at the top, firmly.

2

Repeat this process, pulling close to the wire-seal at the bottom, so that the set is now divided into two equal parts.



3

Continue this "pulling-apart" process with the section in which the wire-seals remain, dividing it in half.

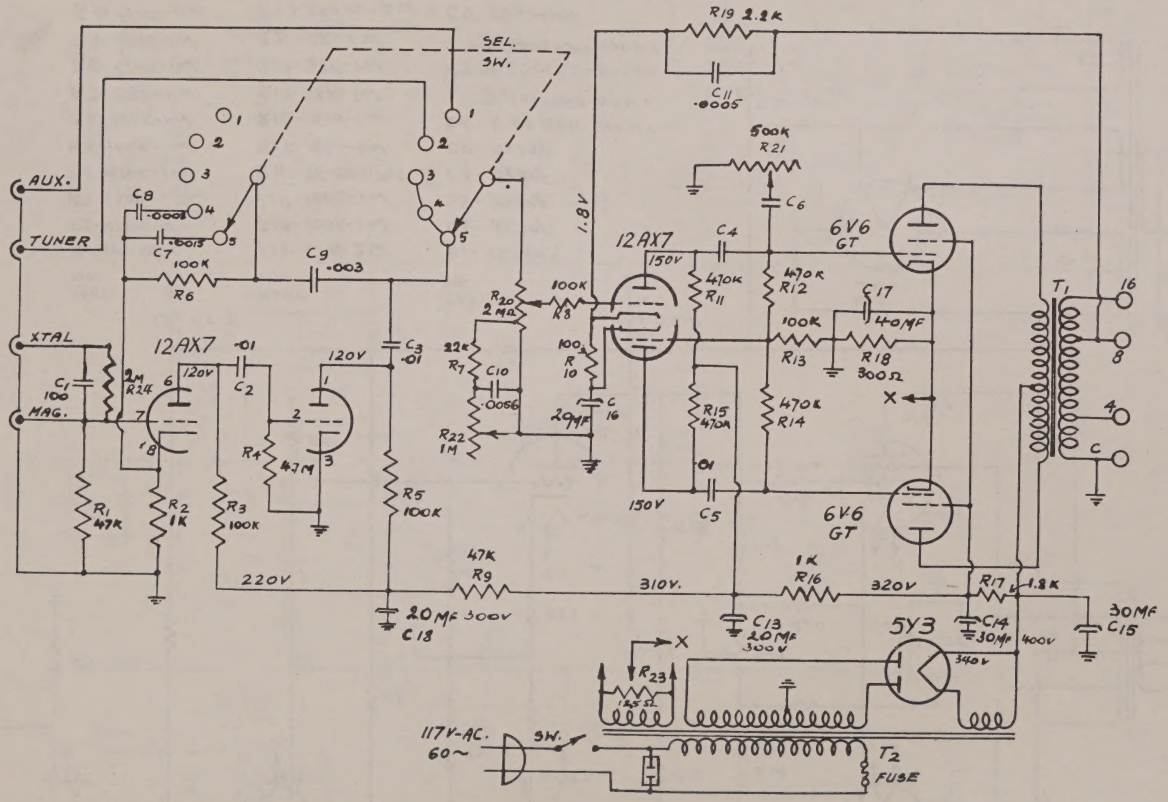
4

Finally, remove the wire-seals left in the last section; this can easily be done with your fingernail or any sharp instrument.

Your "Safety-Sealed" PHOTOFACT Set is now ready for profit-making use . . .

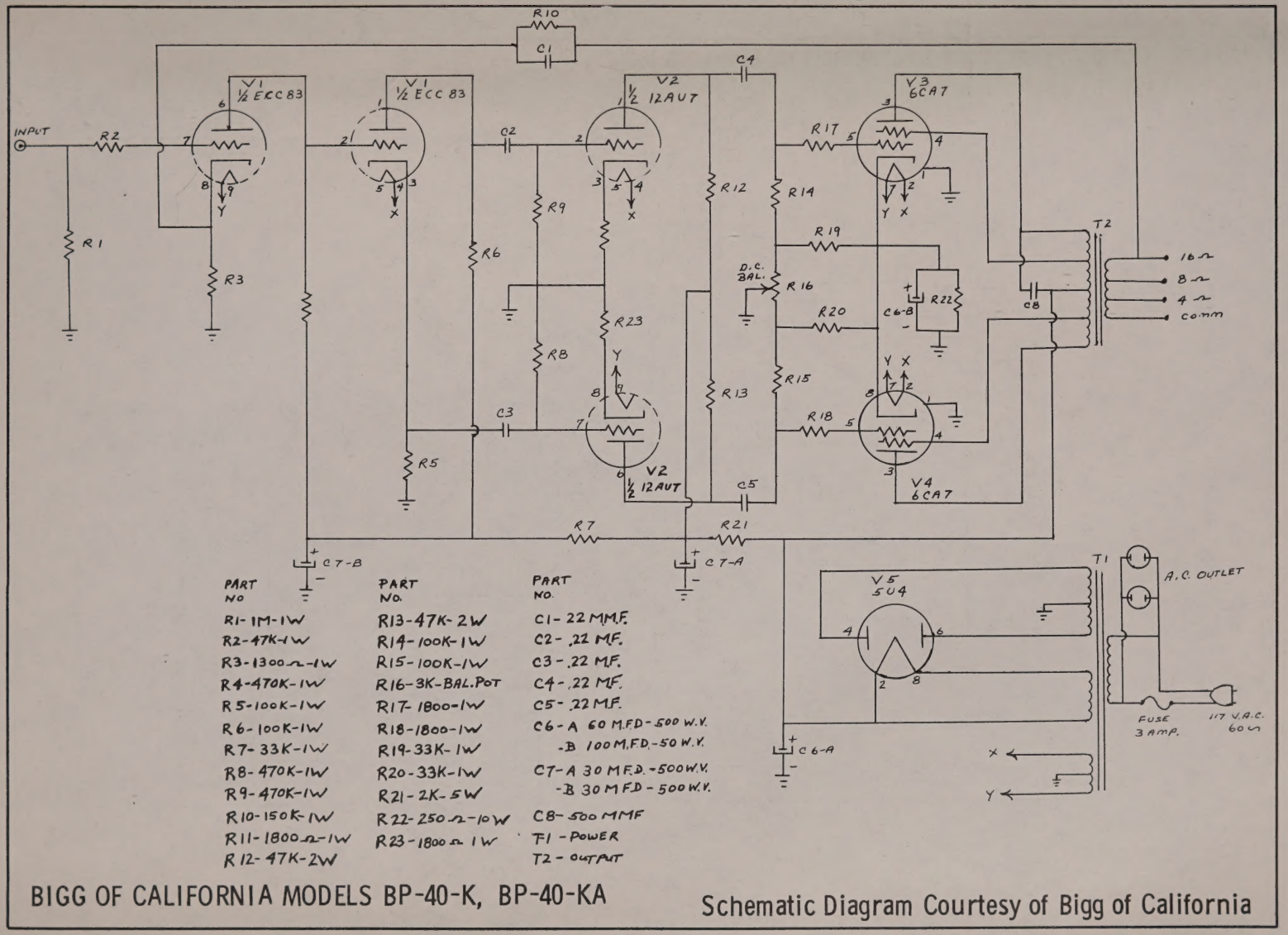
IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.



BOULEVARD MODEL 5T12

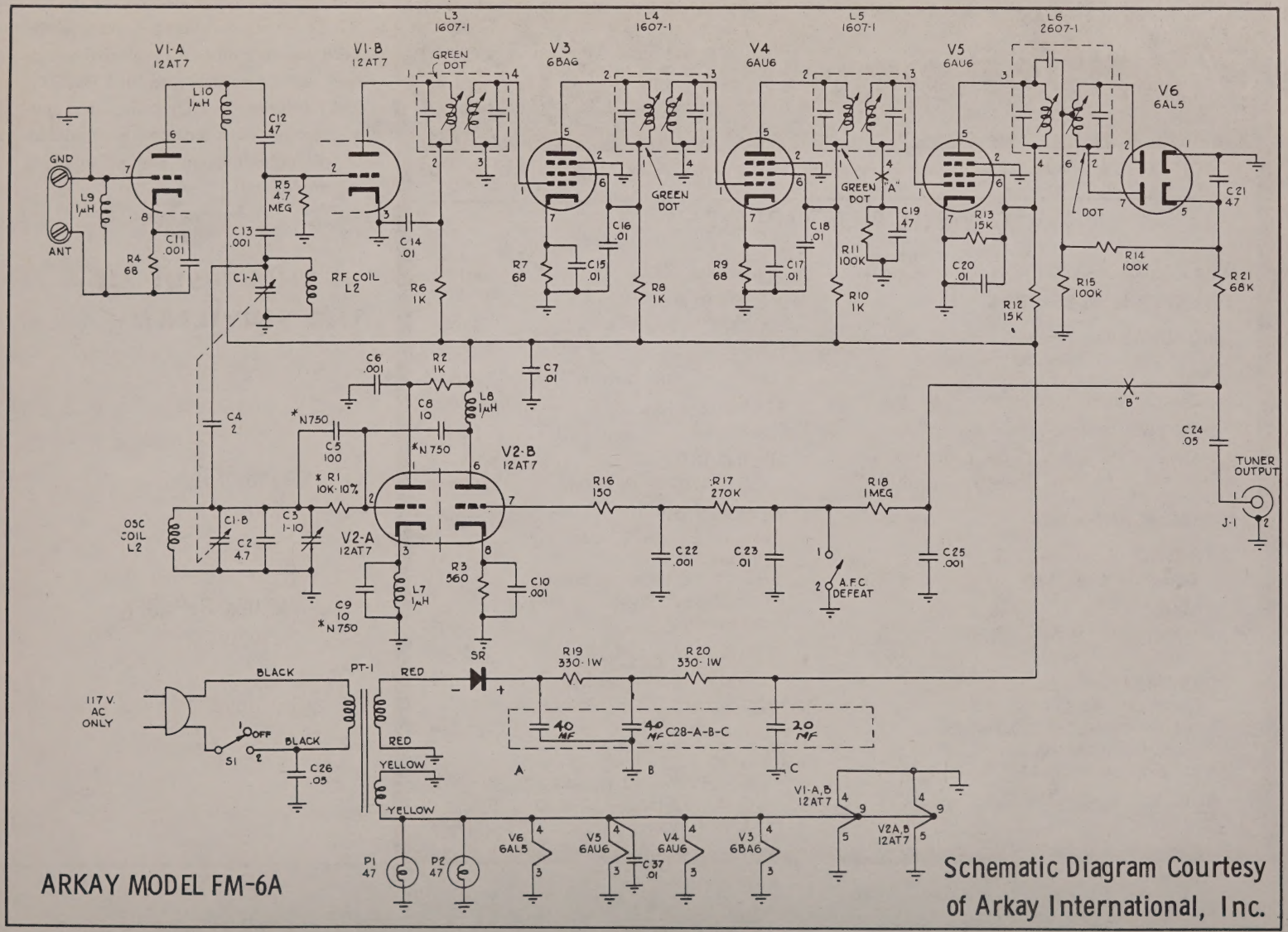
Schematic Diagram Courtesy of Boulevard Electronics, Inc.



PART NO	PART NO.	PART NO.
R1- 1M-1W	R13- 47K- 2W	C1- 22 MMF.
R2- 47K-1W	R14- 100K- 1W	C2- .22 MF.
R3- 1300 Ω-1W	R15- 100K-1W	C3- .22 MF.
R4- 470K- 1W	R16- 3K- BAL. POT	C4- .22 MF.
R5- 100K- 1W	R17- 1800-1W	C5- .22 MF.
R6- 100K- 1W	R18- 1800- 1W	C6- A 60 M.F.D- 500 W.V.
R7- 33K- 1W	R19- 33K- 1W	-B 100 M.F.D. - 50 W.V.
R8- 470K- 1W	R20- 33K- 1W	C7- A 30 M.F.D. - 500 W.V.
R9- 470K- 1W	R21- 2K- 5W	-B 30 M.F.D - 500 W.V.
R10- 150K- 1W	R22- 250 Ω- 10W	C8- 500 MMF
R11- 1800 Ω- 1W	R23- 1800 Ω 1W	T1 - POWER
R12- 47K- 2W		T2 - OUTPUT

BIGG OF CALIFORNIA MODELS BP-40-K, BP-40-KA

Schematic Diagram Courtesy of Bigg of California



ARKAY MODEL FM-6A

Schematic Diagram Courtesy of Arkay International, Inc.

The PHOTOFACT® Servicer

SET 517 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ FEB. 1961

CONTENTS PHOTOFACT SET 517

TRADE NAME AND MODEL	SET AND FOLDER NO.
TELEVISION RECEIVERS	
CORONADO	
TV2-9533A, -9596A, -9598A, -9600A, -9602A, -9604A, -9606A, -9608A, -9610A, -9612A	517-1
RCA VICTOR	
Chassis CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B	517-2
OTHER EQUIPMENT	
AIRLINE	
GEN-760A, GEN-760B	517-3
ARVIN	
60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)	517-4
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BAP-20, BP-340, CAP-60, CP-500, FAP-70, FP-260, FPA-220, FNP-430, L-390, L-559, LAP-40, OAE-10, OE-160, PAC-90, PC-350	517-5
BOGEN	
DS265	517-6
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X19A, X19E (Ch. HS-799)	517-7
MORSE	
300 (Tape Recorder)	517-8
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SHERWOOD	
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SILVERTONE	
256, 1262 (Ch. 528.59750, 528.59810)	517-11
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This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

IN THIS ISSUE OF THE SERVICER:

Arkay Model FM-6A

Bigg of California Models BP-40-K, BP-40-KA

Boulevard Model 5T12

PHOTOFACT® Folder

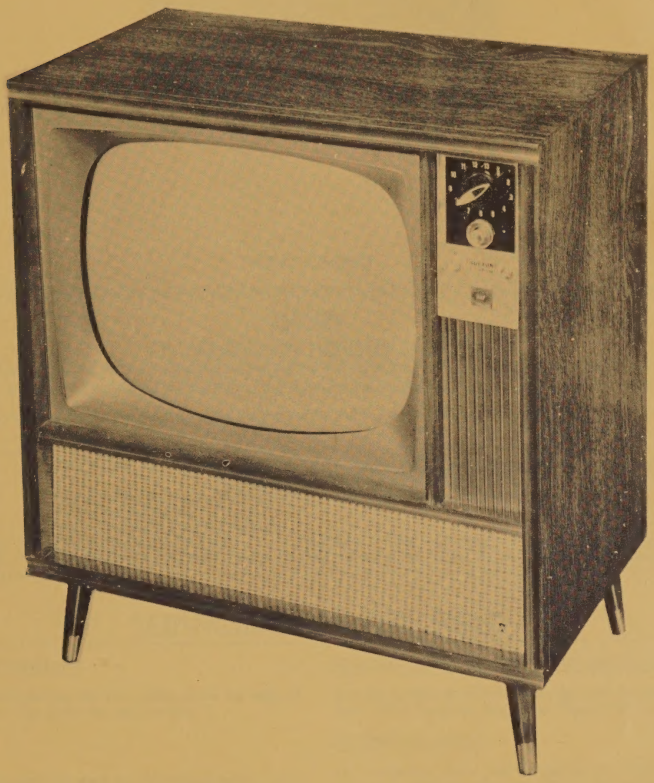
CORONADO MODELS TV2-9533A,-9596A, -9598A,-9600A,-9602A,-9604A,-9606A, -9608A,-9610A,-9612A

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

CORONADO MODELS TV2-9533A,-9596A,-9598A,-9600A, -9602A,-9604A,-9606A,-9608A,-9610A,-9612A



MODEL TV2-9600A

CORONADO MODELS TV2-9533A,-9596A,-9598A,-9600A, -9602A,-9604A,-9606A,-9608A,-9610A,-9612A

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

PHOTOFACT® Folder

CORONADO MODELS TV2-9533A,-9596A, -9598A,-9600A,-9602A,-9604A,-9606A, -9608A,-9610A,-9612A

CORONADO MODELS TV2-9533A,-9596A,-9598A,-9600A, -9602A,-9604A,-9606A,-9608A,-9610A,-9612A

MODEL TV2-9600A

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRADE NAME	CORONADO MODELS TV2-9533A, TV2-9596A, TV2-9598A, TV2-9600A, TV2-9602A, TV2-9604A, TV2-9606A, TV2-9608A, TV2-9610A, TV2-9612A
SUPPLIER	Gamble-Skogmo, Inc., 15 North 8th Street, Minneapolis, Minnesota
TYPE SET	Television Receiver
TUBES	VHF - Fourteen, UHF - Fifteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING VHF - 140 Watts, 1.3 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 5 screws holding the trim strip at the top edge of the safety glass. Tilt glass out and remove.

FUSE DEVICE

A 7.5Ω fusible resistor is used for low voltage power supply protection. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENT

To touch up the VHF Oscillator, remove Channel Selector and Fine Tuning knobs.

AGC

The AGC may be varied by means of a Range control. (For location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The Horizontal Frequency slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive trimmer. (For location, see "Tube Placement Chart".)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Buzz control for MINIMUM buzz and maximum sound. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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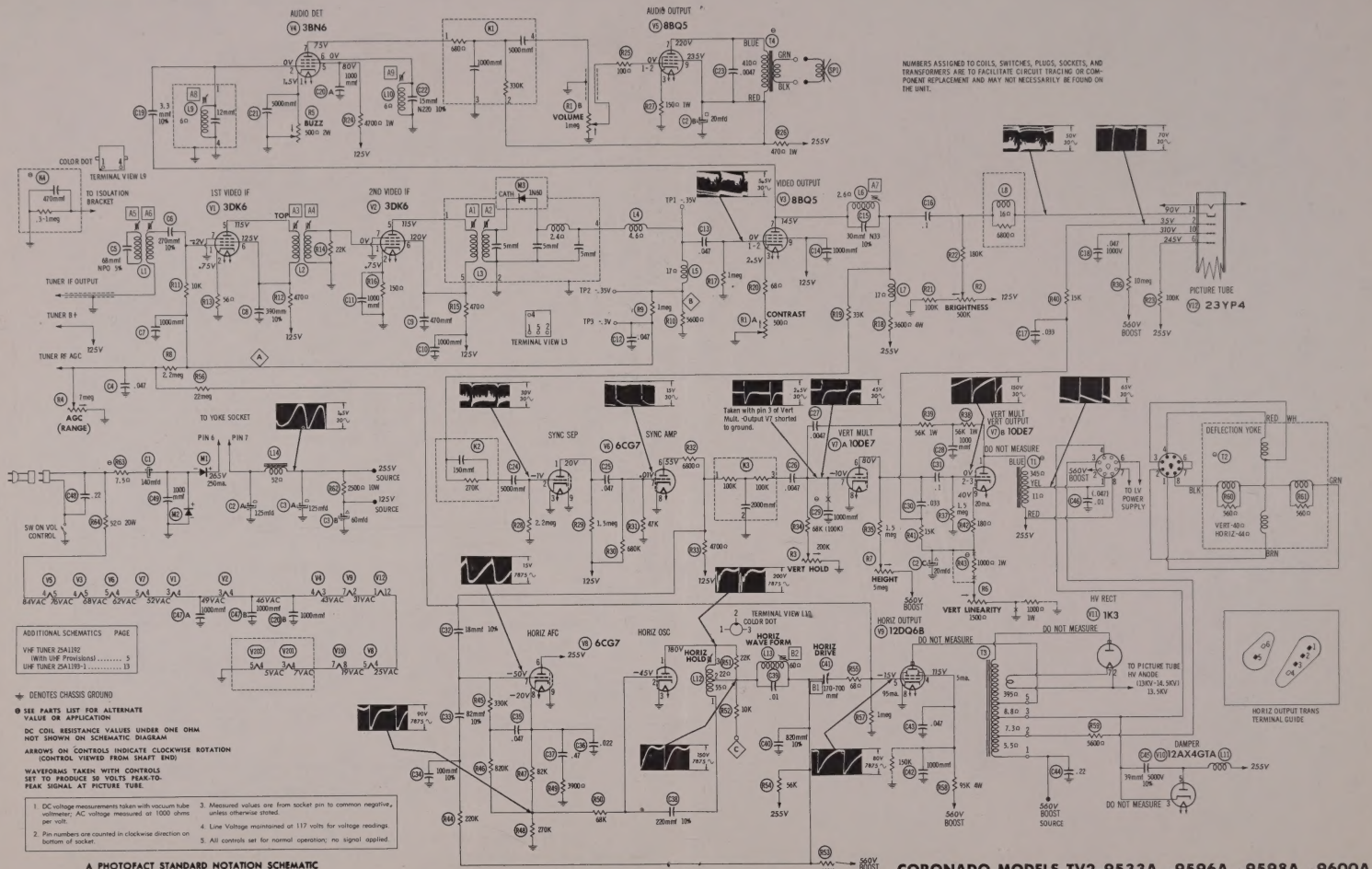
KA234R

SET 517 FOLDER 1



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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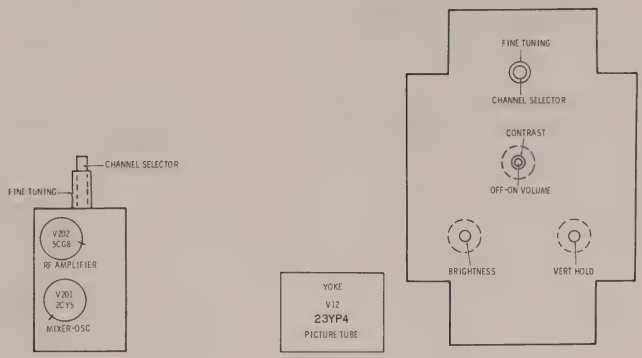
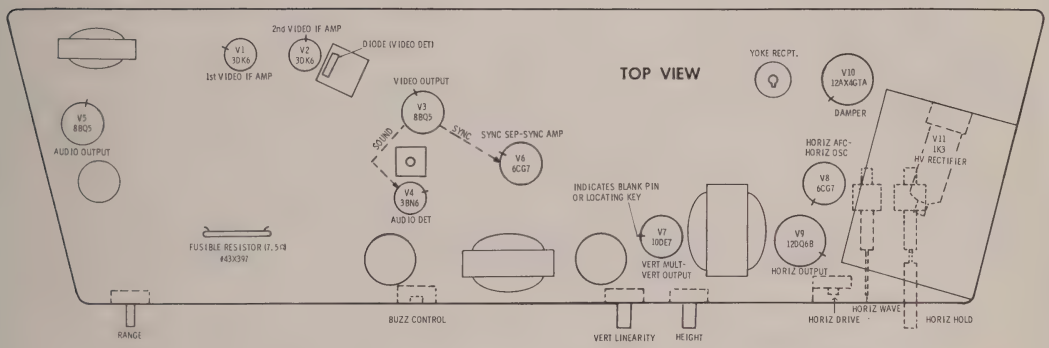
CORONADO MODELS TV2-9533A, -9596A, -9598A, -9600A, -9602A, -9604A, -9606A, -9608A, -9610A, -9612A

TUBE PLACEMENT CHART





TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

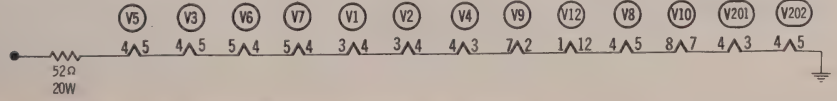
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor, Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V8, V9, V10, V11, V12
No vertical deflection V7
Poor vert. linearity or foldover V7
Poor horiz. linearity or foldover V8, V9, V10
Narrow picture V9, V10, Rectifiers (B+)
Vert. off freq. V7
Horiz. off freq. V8

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (Video Det.), V3
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3
Has pic, no sound V4, V5

SYNC FAILURE
No vert. sync V6
No horiz. sync V6
No vert. or horiz. sync V6

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
The high voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect the negative lead of a 7 volt bias supply to point (A) . Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.01mfd	High side to pin 1 (grid) of 2nd Video IF. Low side to chassis. Adjust output for 4VP-P on scope.	44.0MC (10MC Swp)	42.4MC 45.75MC	Any non-interfering channel	Vert. Amp. thru 47K to point (B) . Low side to chassis. (Across Video Det. load)	A1, A2	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. A1 controls marker position and A2 controls gain and symmetry.
2.	"	High side to pin 1 (grid) of 1st Video IF. Low side to chassis. Adjust for 4VP-P on scope.	"	42.4MC 43.5MC 44.5MC 45.75MC	"	"	A3, A4	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown. A3 controls marker position and A4 controls gain and symmetry.
3.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	"	41.25MC 42.4MC 43.5MC 44.5MC 45.75MC	"	"	A5, A6, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. Adjust A5 to place 41.25MC marker in trap notch.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01mfd	High side to pin 2 (grid) of Video Output. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	AC probe to pin 11 (cathode) of picture tube. Common to chassis. Use 0-10V AC scale.	A7	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT

Tune in a TV station and reduce the signal strength at the antenna terminals until a hiss is heard in the sound similar to super-regeneration.
Adjust A8, A9 and the Buzz control for maximum undistorted sound with MINIMUM buzz.
If the hiss disappears during adjusting, further reduce the signal strength.

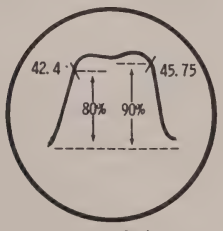


FIG.1

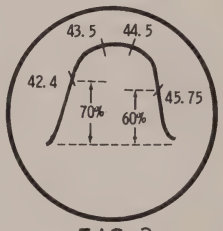


FIG.2

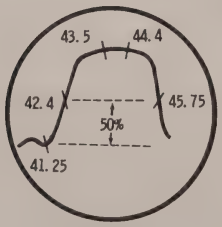
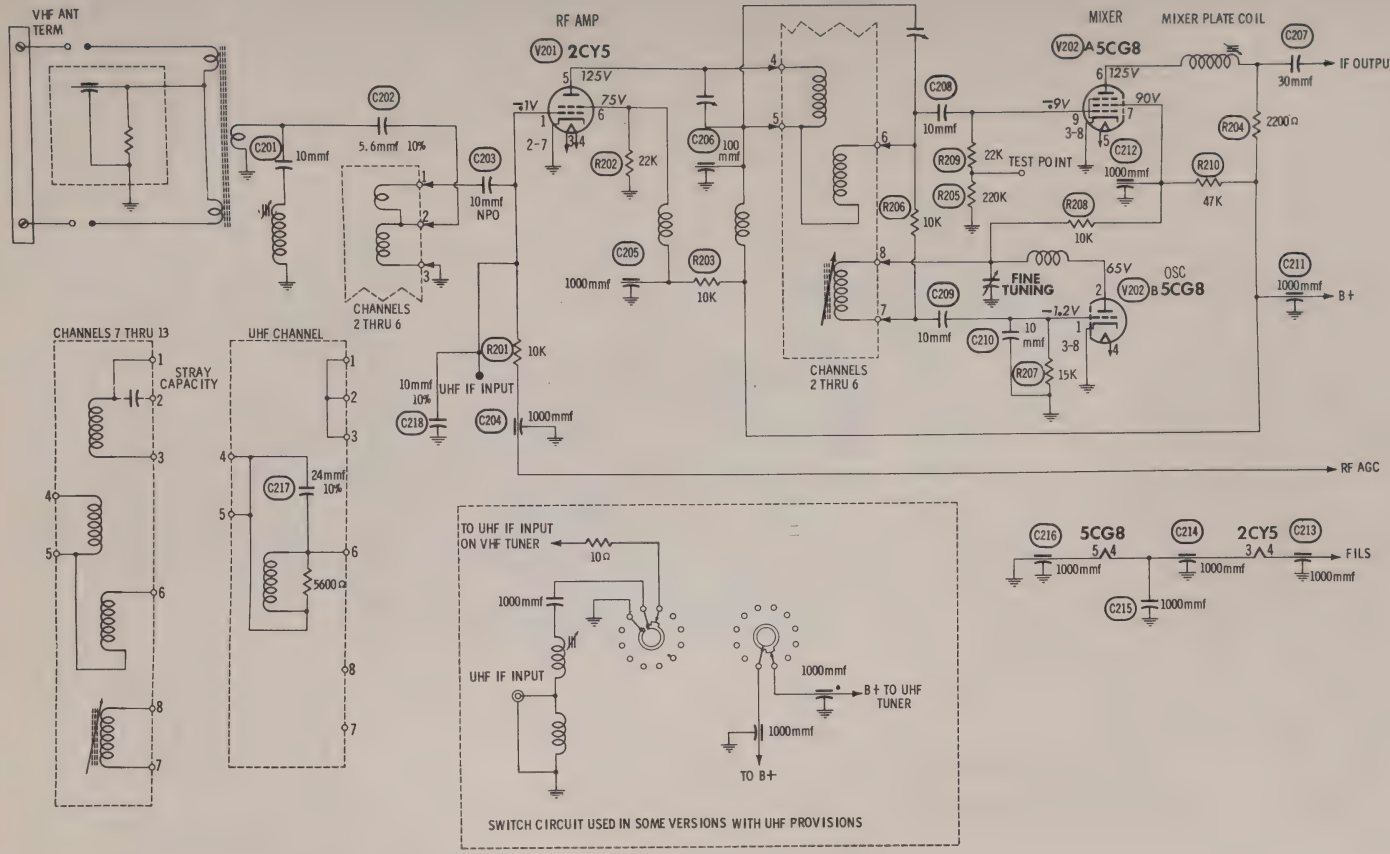


FIG.3



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER with UHF Provisions - 25A1192

CORONADO MODELS TV2-9533A, -9596A, -9598A, -9600A, -9602A, -9604A, -9606A, -9608A, -9610A, -9612A

TUNER PARTS LIST AND DESCRIPTIONS

25A1192

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	◆ GENERAL ELECTRIC ◆		RAYTHEON ◆	SYLVANIA ◆	
V201	RF Amp.	2CY5	V202	Mixer - Osc.	5CG8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C202	5.6 10%							10TCC-V5.6
C203	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C204	1000		EF-001	MFT-1000		CCF-102	CT280A	
C205	1000		EF-001	MFT-1000		CCF-102	CT280A	
C206	100		EF-0001	MFT-100				
C207	30							
C208	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C209	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C210	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C211	1000		EF-001	MFT-1000		CCF-102	CT280A	
C212	1000		EF-001	MFT-1000		CCF-102	CT280A	
C213	1000		EF-001	MFT-1000		CCF-102	CT280A	
C214	1000		EF-001	MFT-1000		CCF-102	CT280A	
C215	1000		DI-1000	DD-102	BYA10D1	CCD-102	GP210	10TS-D10
C216	1000		EF-001	MFT-1000		CCF-102	CT280A	
C217	24 10%		NPO-SI 24	TCZ-24	C10Q24C	CCTO-240	CNO-427	10TCC-Q25
C218	10 10%		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	10K				R206	10K			
R202	22K				R207	15K			
R203	10K				R208	10K			
R204	2200Ω				R209	22K			
R205	220K				R210	47K			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA
K201	VHF Antenna Filter			

TUNER ALIGNMENT INSTRUCTIONS

TUNER ALIGNMENT

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

VHF OSCILLATOR ALIGNMENT

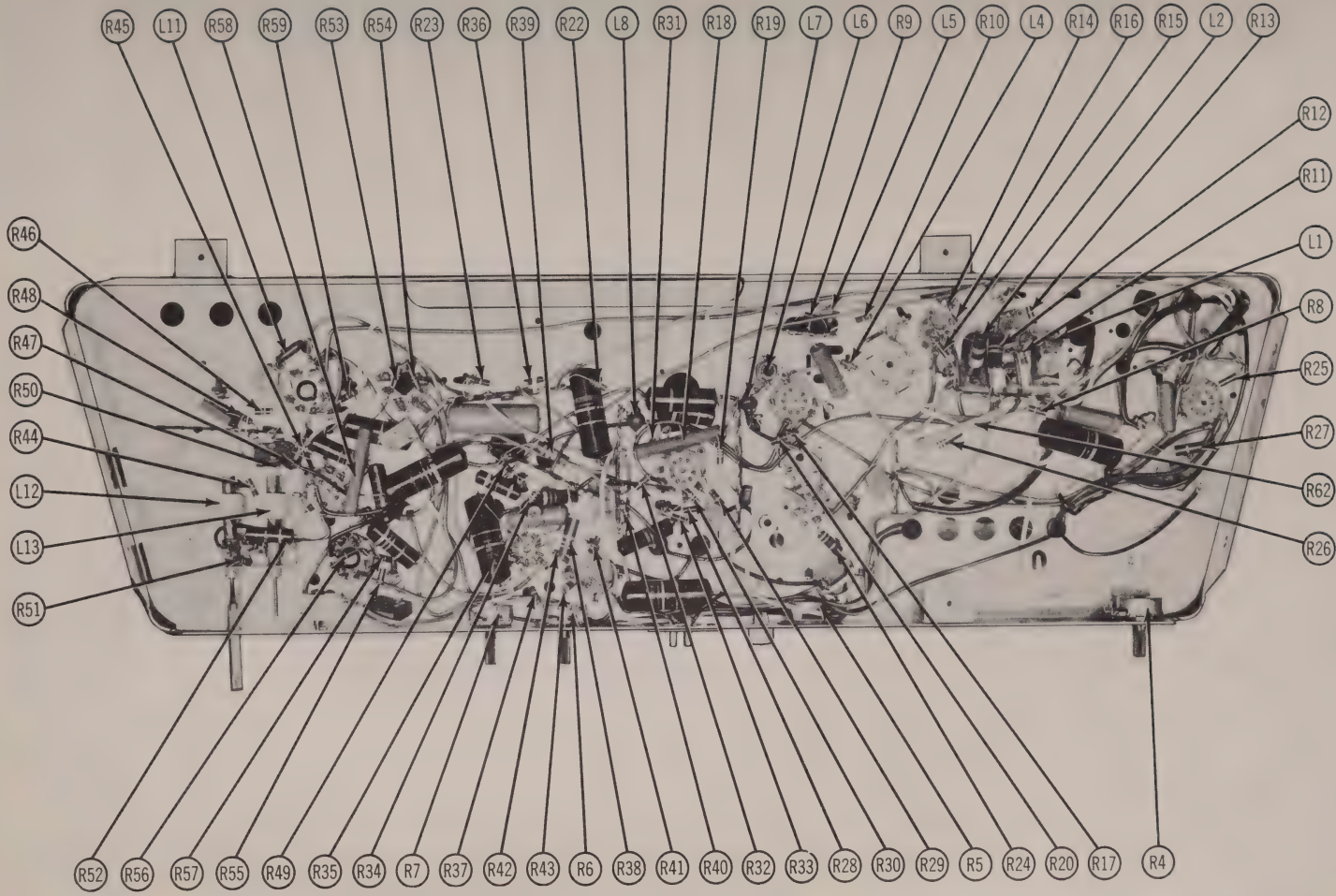
The individual channel adjustment screws are accessible one at a time, thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning to the center of its range and switch to channel to be adjusted and adjust for best picture and sound.

VHF RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

UHF TUNER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

CORONADO MODELS TV2-9533A, -9596A, -9598A, -9600A, -9602A, -9604A, -9606A, -9608A, -9610A, -9612A

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No	USE	GENERAL ELECTRIC • TYPE	RAYTHEON • TYPE	SYLVANIA • TYPE
V1	1st Video IF Amp.	3DK8		
V2	2nd Video IF Amp.	3DK8		
V3	Video Output	6BQ6		
V4	Audio Det	3BN6		
V5	Audio Output	6BQ6		
V6	Sync Sep. - Sync Amp.	6CQ7		
V7	Vert. Mult. - Vert. Output			10DE7
V8	Horiz. AFC - Horiz. Osc.			6CQ7
V9	Horiz. Output			12DQ6B
V10	Damper			12AX4GTA
V11	HV Rectifier			1K3GT

PICTURE TUBE

ITEM No	REPLACEMENT DATA: CORONADO PART No	GENERAL ELECTRIC PART No	RCA PART No	RAYTHEON PART No	SYLVANIA PART No	NOTES
V12			23YP4 ①		23YP4 ②	① Aluminized ② Silver Screen "86"

ELECTROLYTIC CAPACITORS

ITEM No	RATING: CAP	VOLT	CORONADO PART No	AEROVOX PART No	CORNELL DUBILIER PART No.	MALLORY PART No	PYRAMID PART No	SPRAGUE PART No	NOTES
C1	140	150	45X431	AFH8H-33	EA50B1	FP17	TMH-1370	TVL-1428	
C2A	≥125	300	45X431	AFH4-02-50	XC0733.3	FP333.15	TMQ-4146	TVL8-3574.3*	
B	≥ 30	300							
C	≥ 30	50							
C3A	≥125	300	45X467	AFH3-99-82	D0046	FP326.75	TMT-3310	TVL8-3574.6*	
B	≥ 60	300							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING			REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.047	200V			P288N-047	DD-503	CUB2B47	4DP-3-473	GEM-4147	2TM-S47
C5	68	NPO	5%			DTE-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C6	270		10%		DI-270	DD-271	L10T27	CCD-271	GP327	10TS-T27
C7	1000				BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	390				DI-390	DD-391	L10T39	CCD-391	B-339	10TS-T39
C9	470		10%		DI-470	DD-471	S10T47	CCD-471	GP347	10TS-T47
C10	1000				BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C11	1000		10%		DI-1000	DD-103	P1M1X	CCD-102	GP310	10TS-D10
C12	.047	200V			P288N-047	DD-503	CUB2B47	4DP-3-473	GEM-4147	2TM-S47
C13	.047	200V			P288N-047	DD-503	CUB2B47	4DP-3-473	GEM-4147	2TM-S47
C14	1000				BPD-001	DD-103	BYA10D1	CCD-102	B-210	5HK-D10
C15	30	N33	10%							
C16	.1	400V	10%		P488N-1	DT-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C17	.033	200V	10%		V84C2S33-10%		P346S33	4DP-3-333	GEM-1613	6TM-S33
C18	.047	1000V			P10S47-047		CUB1D47	1SDP-3-473	GEM-4147	10TM-S47
C19	3.3		10%		NPO-3I 3.3	TCZ-3R3	C10Y33C	CCTO-3R3	CNO-433	10TCC-Y33
C20A	1000				BPD-2X001	DD3-103	BYD60DI	CCD-102	B3X310	5HK-2D10
B	1000							CCD-103		
C21	5000				BPD-005	FF-502	BYA10D5	CCD-502	B-250	5HK-D50
C22	15	N220	10%							
C23	.0047	600V			P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C24	5000				BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C25	.047	400V			P488N-047	DD-503	CUB4B47	4DP-3-473	GEM-4147	4TM-S47
C26	.0047	400V			P488N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C27	.0047	400V	10%		V84C4D47-10%		P4M5D47	6DP-1-472	GEM-1624??	6TM-D47
C28	1000				BPD-001	DD-103	BYA10D1	CCD-102	B-210	5HK-D10
C29	1000				BPD-001	DD-103	BYA10D1	CCD-102	B-210	5HK-D10
C30	.033	600V			P688N-033	DD-303	CUB6S33	6DP-3-333	GEM-6133	6TM-S33
C31	.1	600V			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C32	18		10%		1469-000018	TCZ-18	22R5Q18	CM-19B-180K	CNO-418	M3-418
C33	82		10%		1469-000042	TCZ-82	22R5Q82	CM-19B-820K	CNO-482	M3-482
C34	100		10%		1469-0001	TCZ-100	22R5T1	CM-19B-101K	MCB23S	M3-S10
C35	.047	200V			P288N-047	DD-503	CUB2B47	4DP-3-473	GEM-4147	2TM-S47
C36	.022	200V			P288N-022	DD-203	CUB4S22	4DP-3-223	GEM-4122	2TM-S22
C37	.47	200V			P288N-.47		CUB2P47	4DP-4-474	GEM-2047	2TM-P47
C38	220		10%		1469-00022	TCZ-220	22R5T22	CM-19B-221K	CNO-422	M3-S22
C39	.01	400V			P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C40	330		10%		1469-00032		58GT33	CM-19B-221K	MCB24S	M3-S32
C41	170-700			#TA276				469		
C42	1000				BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C43	.047	400V			P488N-047	DD-503	CUB4B47	4DP-3-473	GEM-4147	4TM-S47
C44	.23	400V			P488N-23		CUB4P23	4DP-5-234	GEM-4023	4TM-P23
C45	39	5000V	10%						6DY-439	
C46	.01	400V		(.047) †	P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S1
C47A	1000				BPD-2X001	DD3-103	BYD60DI	CCD-102	B3X310	5HK-2D10
B	1000							CCD-103		
C48	.22	400V			P488N-22		CUB4P22	4DP-5-224	GEM-4023	4TM-P22
C49	1000	1400V		Note 1	DAC-27	DD6-103	SYD16R	16DP-3-103	UAC-100	BL-B0

Note 1. May not be used in some versions. † Alternate Value. #Coronado Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500Ω	↓	78X37	F1-1	RTV-710		■UE4143-S	Contrast
B	Imeg	↓		R2-51				Volume
C	Switch			KR-1				Power Off-On
R2A	500K	↓	40X482	B-59	A47-500K-S	Q1I-133	U50	Brightness
B	Shaft			Not Req.	F8-3	Not Req.	Not Req.	
R3A	250K	↓	40X484	B-68	A47-250K-S	Q1I-129	U43	Vert. Hold
B	Shaft			Not Req.	F8-3	Not Req.	Not Req.	
R4	1meg	↓	40X483					Range (AGC)
R5	500Ω	2(WW)	40X472			110-600	PFL-600	Buzz

CONTROLS (cont)

ITEM No	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R8A	1500Ω	↓	40X464-2					
B	Shaft				TT-511	B4T-1500-B	B11-109	Vert. Linearity
R7A	5meg	↓	40X491		Not Req.	Not Req.	TM-4	
B	Shaft						PTA152L	Height
							Not Req.	

■ "WTA-LOC" Equivalent: FC52L, RU16L, OS887, IS2250, U541.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R8	2.2meg			
R9	1meg			
R10	5600Ω			
R11	10K			
R12	470Ω			
R13	56Ω			
R14	22K			
R15	470Ω			
R16	150Ω			
R17	1meg			
R18	3600Ω 4W	PW5-3600Ω	4W-SQ-3600Ω	#43X331
R19	33K			
R20	68Ω			
R21	100K			
R22	180K			
R23	100K			
R24	4700Ω 1W			
R25	100Ω			
R26	470Ω 1W			
R27	150Ω 1W			
R28	2.2meg			
R29	1.5meg			
R30	680K			
R31	47K			
R32	8800Ω			
R33	4700Ω			
R34	68K			100K ①
R35	1.5meg			
R36	10meg			

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R37	1.5meg			
R38	56K 1W			
R39	56K 1W			
R40	15K			
R41	15K			
R42	180Ω			
R43	1000Ω 1W ②			
R44	220K			
R45	330K			
R46	820K			
R47	82K			
R48	220K			
R49	2600Ω			
R50	68K			
R51	22K			
R52	10K			
R53	220K			
R54	56K			
R55	68Ω			
R56	22meg			
R57	1meg			
R58	95K 4W	PW5-95000Ω	5W-SQ-95000Ω	#43X351
R59	5600Ω			
R60	560Ω			
R61	560Ω			
R62	2500Ω 10W	PW10-2500Ω	5W-SQ-2500Ω	#43X291
R63	7.5Ω ③			#43X397
R64	52Ω 20W			#43X302

① Alternate Value. ② May not be used in some versions. ③ Fusible Type. # Coronado Part Number.

COMPONENT COMBINATIONS

ITEM No	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA
K1	Volume Comp.	1000mmf, 5000mmf, 680Ω, 330K	78X16	Centralab PC-406
K2	Sync Sep. Grid Vert. Integrator	150mmf, 270K	78X15	Sprague PRC-5
K3	Isolation	2000mmf, 100K, 100K	76X29	
K4		4700mmf, .3-1meg	*	Centralab RC-471 Sprague ACI-1

* Some versions may use 1000mmf (1000V), 220K - 1meg Component Combination (Part #76X18) in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1A	1st Video IF	9A2436				
B	41.25MC Trap					
L2	2nd Video IF	9A2444				
L3A	3rd Video IF	9A2435				
B	RF Choke (30uh)		TV-180	6176	RTC-8593	
L4	RF Choke (50uh)	9A2375	TV-180	6176	RTC-8593	
L5	Peaking (290uh)	36A22	TV-185	6155	RTC-8587	
L6	4.5MC Trap	9A2366	TV-151	1469	RTC-8802	
L7	Peaking (325uh)	36A27	TV-200	6132	RTC-8577	
L8	Peaking (370uh)	36A45 ①	TV-195 *	6130 *	RTC-8578 *	①Wound on 6800Ω Resistor.
L9	Sound Takeoff Coil	9A2434	TV-154	1470-A	RTC-8604	* Parallel with 6800Ω Resistor.
L10	Quadrature Coil	9A2367	TV-121	1480	RTC-8605	
L11	RF Choke (1.5uh)	9A2360	BC-562	4604	RTC-8516	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L12	Horiz. Osc.	9A248						
L13	Horiz. Waveform	9A2372	MWC-12	6315	QRC-104 ①	WC-18	HS-5 ①	WLC-3

① Enlarge mounting hole.

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT (1000 ~Cy.)	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L14	.250A	52Ω	.8 Hy.	52X95-11	C-3296 ①	C-3343	26C44	C-28X	① Drill new mounting hole.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA: CORONADO PART No	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	Vert. Output	51X207-1A	A-3855	V026 ①	VO-108	26H73 ②	A-442X ③	
	Alt. Vert. Output	51X207						
T2	Yoke	9A2482						
	Yoke Clamp	30X631						
T3	Horiz. Output	53X389						

① Connect as Autoformer. ② Drill new mounting hole(s). ③ Cut and tape red/black lead.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	SEC.	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	6000Ω	3-4Ω	51X206A ①	A-3026	A-3877	26B81	S-6X	① Alternate Part #51X206.

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: CORONADO PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3-4Ω	12A52T-2	5A07	Some Models use a 4" x 6" Speaker or a 3½" Speaker. Specify Model number when ordering replacement.

POWER RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: CORONADO PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.250A	66X23	1N1764	F6	SR500	Silicon
M2	.250A	66X23	1N1764	F6	SR500	Silicon

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: CORONADO PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M3	1N60			1N60	1N60	Video Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M4	Tuner	25AI192	VHF, STANDARD COIL REPLACEMENT Type #GG-422E/A
	Tuner	35AI193-1	UHF
	Magnet	3A476	Beam Aligner

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

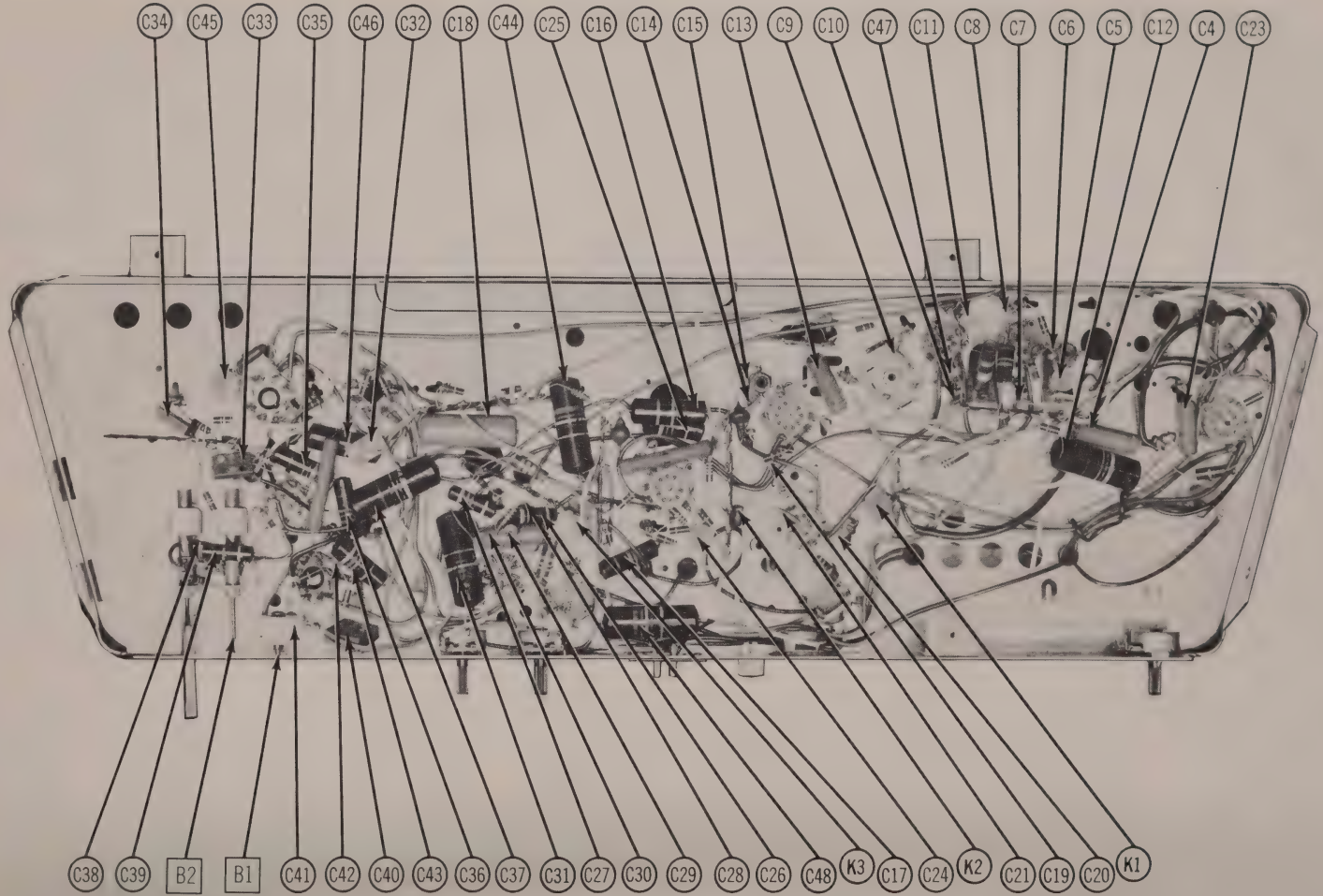
NAME	PART NO.	DESCRIPTION
Knob	10AI005-1	Channel Selector
Knob	10AI001-2	Fine Tuning
Knob	10AI033-1	Contrast
Knob	10AI32-1	Off-On, Volume
Knob	10AI008-1	Brightness, Vertical Hold
Knob	10AI016-1	Horiz. Hold
Knob	10AI018-3	Range Control
Knob	10AI098-2	UHF Tuning
Knob	10AI99-1	UHF Indicator

WIRING DATA

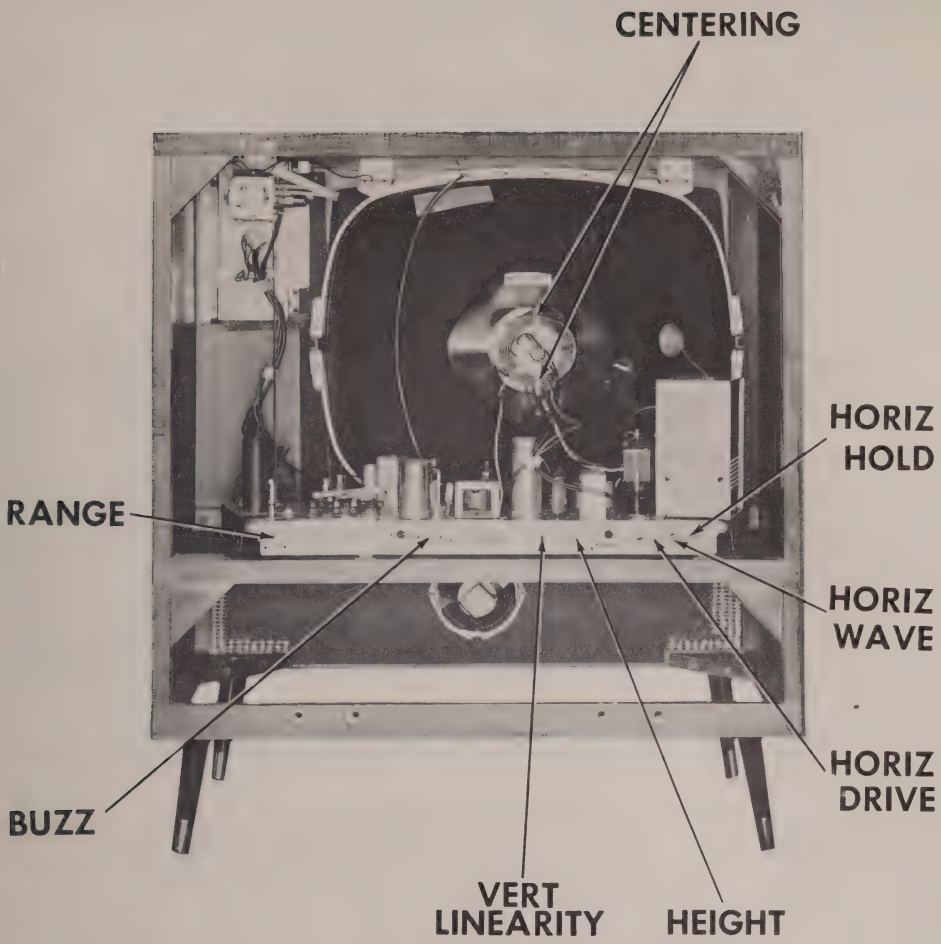
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8739 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8465 (Round) - 5 Conductor 8468 (Round) - 8 Conductor

CORONADO MODELS TV2-9533A, -9596A, -9600A, -9602A, -9604A, -9606A, -9608A, -9610A, -9612A

FOLDER 1



CHASSIS BOTTOM VIEW - CAPACITOR & MISC. IDENT.



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a station and adjust the Horizontal Hold until the picture is just about to tear out of sync as can be seen at the top of the picture.

Turn the Contrast control fully counterclockwise and the Brightness control clockwise so that the picture appears washed out. Turn the Horzontal Drive trimmer (B1) clockwise until white bars (drive lines) appear in the left center portion of the raster, then counterclockwise until the white bars just disappear.

Connect the vertical amplifier of the scope to point Ⓒ. Low side to chassis. Adjust the Horizontal Waveform slug (B2) until the round and sharp peaks of the waveform are equal in amplitude. See Fig. 4. Keep the picture in sync during this adjustment.

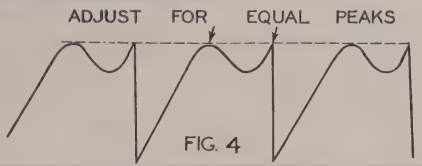


FIG. 4

DISASSEMBLY INSTRUCTIONS

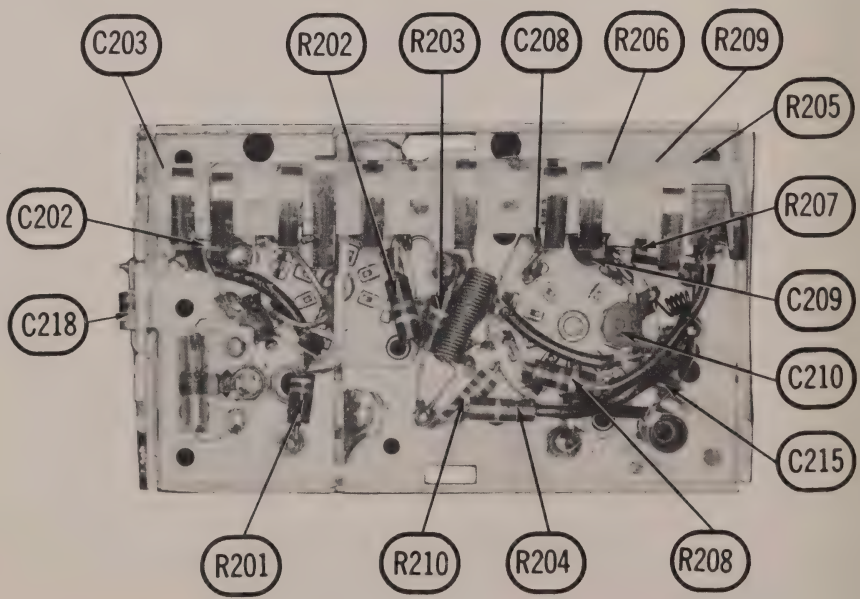
CHASSIS REMOVAL

1. Remove 8 wood screws holding rear cover. Remove rear cover.
2. Remove 6 push-on type knobs on front of cabinet.
3. Remove 4 screws holding control panel in front (with tuner on panel).
4. Remove speaker leads, yoke plug, picture tube ground lead, and high voltage lead.
5. Remove 4 chassis bolts.
6. Remove chassis.

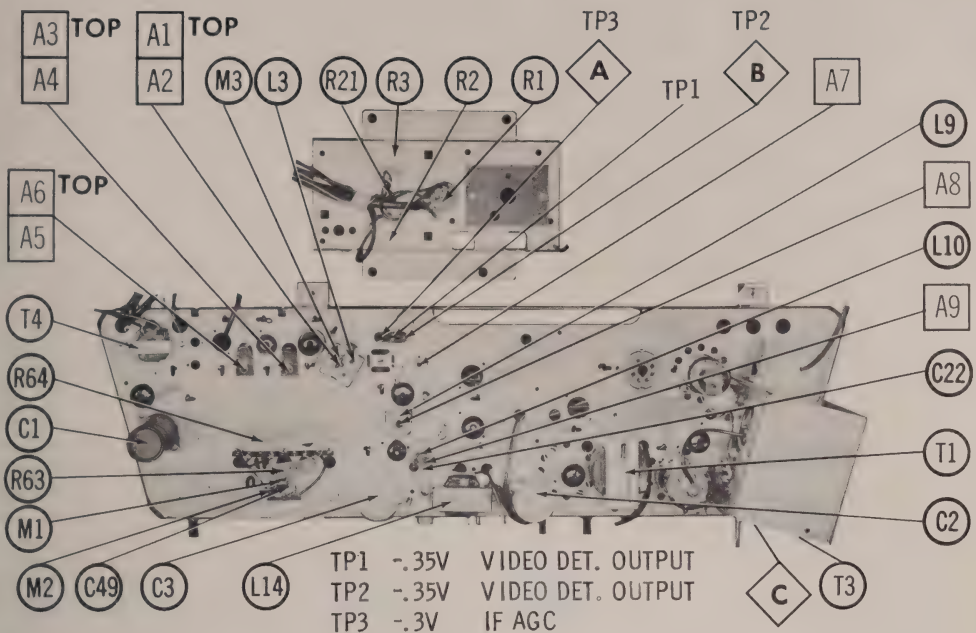
PICTURE TUBE REMOVAL

1. It is necessary to remove chassis for picture tube removal. (See "Chassis Removal".)

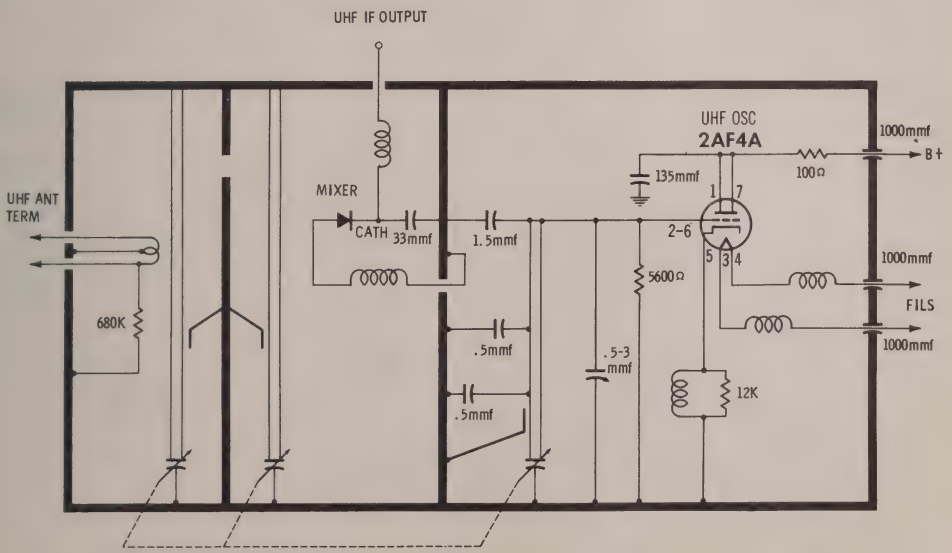
VHF TUNER with UHF Provisions 25A1192 - TOP VIEW



VHF TUNER with UHF Provisions 25A1192 - BOTTOM VIEW



CHASSIS - TOP VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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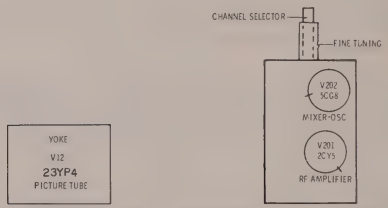
UHF TUNER 25A1193-1

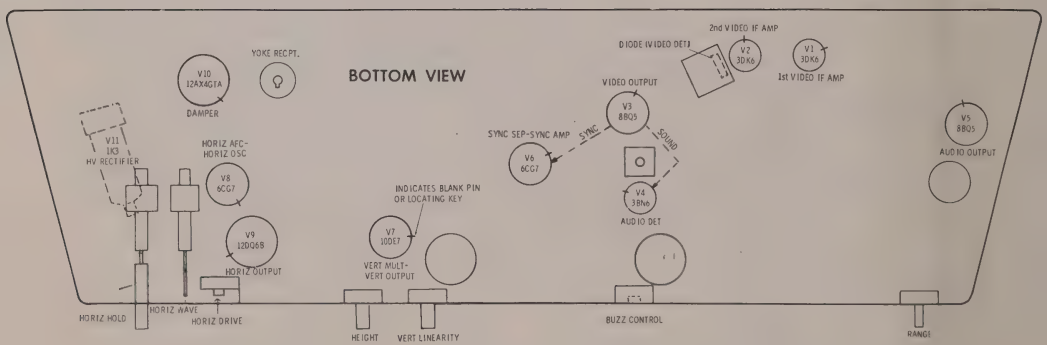
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3DK6	• 800K	56Ω	60Ω	55Ω	† 10K	† 10K	0Ω		
V2	3DK6	0Ω	150Ω	55Ω	50Ω	† 3000Ω	† 3000Ω	0Ω		
V3	8BQ5	NC	1meg	• 90Ω	90Ω	80Ω	NC	† 3600Ω	NC	† 2500Ω
V4	3BN6	• 150Ω	6Ω	45Ω	50Ω	† 7200Ω	6Ω	† 330K		
V5	8BU5	100Ω	NC	150Ω	100Ω	90Ω	NC	† 930Ω	NC	† 520Ω
V6	6CG7	† 1.5meg	2.2meg	0Ω	75Ω	80Ω	† 13K	47K	0Ω	0Ω
V7	10DE7	† 405Ω	NC	1.5meg	60Ω	75Ω	• † 3meg	• 200K	0Ω	• 2200Ω
V8	6CG7	† 56K	340K	0Ω	25Ω	20Ω	† 52Ω	1.4meg	350K	0Ω
V9	12DQ6B	TP	32Ω	TP	† 95K	1meg	NC	45Ω	0Ω	TOP CAP † 8Ω
V10	12AX4GTA	TP	NC	¶	NC	† 52Ω	TP	7Ω	20Ω	
V11	1K3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP † 400Ω
V12	23YP4	32Ω	• 32K	Pin 6 † 100K	Pin 10 † 10meg	Pin 11 • 320K	Pin 12 25Ω			
V201	2CY5	• 10K	0Ω	5Ω	7Ω	† 2500Ω	† 12K	0Ω		
V202	5CG8	15K	† 12K	0Ω	5Ω	0Ω	† 5000Ω	† 50K	0Ω	242K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM OUTPUT OF M1.
‡ MEASURED FROM PIN 3 OF V10.

NC NO CONNECTION
TP TIE POINT





TUBE PLACEMENT CHART

PHOTOFACT® Folder with CIRCUITRACE®

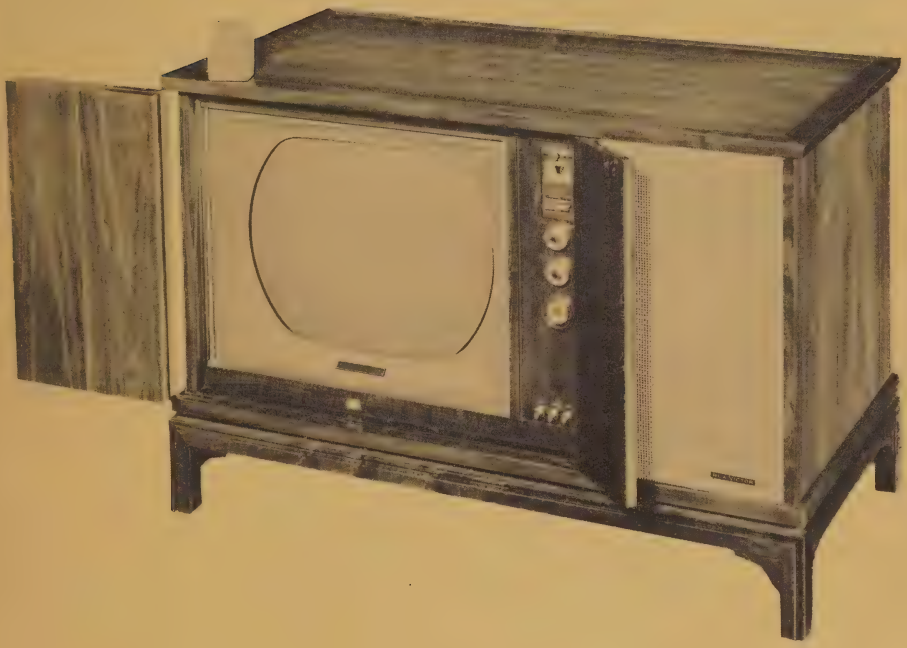
RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B



MODEL 211CDR936U (TV CH. CTC10F)

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B

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RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B

MODEL 211CDR936U (TV CH. CTC10F)

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B

TRADE NAME	RCA Victor	MODELS	CHASSIS
		211CB822, 211CD855, 211CD856, 211CD857	CTC10A
		211CB822U, 211CD855U, 211CD856U, 211CD857U	CTC10B
		211CD835, 211CD835X, 211CD836, 211CD836X, 211CD837, 211CD837X, 211CD865, 211CD866, 211CD867, 211CD885, 211CD886, 211CD887, 211CD896, 211CD904, 211CD920, 211CD924	CTC10C
		211CD835U, 211CD835XU, 211CD836U, 211CD836XU, 211CD837U, 211CD837XU, 211CD865U, 211CD866U, 211CD867U, 211CD885U, 211CD886U, 211CD887U, 211CD896U, 211CD904U, 211CD920U, 211CD924U	CTC10D
		211CDR835, 211CDR836, 211CDR837, 211CDR886, 211CDR896, 211CDR904, 211CDR920, 211CDR924, 211CDR932, 211CDR935, 211CDR936	CTC10E
		211CDR835U, 211CDR836U, 211CDR837U, 211CDR886U, 211CDR896U, 211CDR904U, 211CDR920U, 211CDR924U, 211CDR932U, 211CDR935U, 211CDR936U	CTC10F
		211CB812 ..Chassis CTC10T; 211CB812U .. CTC10TU; 211CRH976 .. CTC10W ("CDR" Models use Remote Control Receiver CTP7B and Remote Control Transmitter CRK3F)	

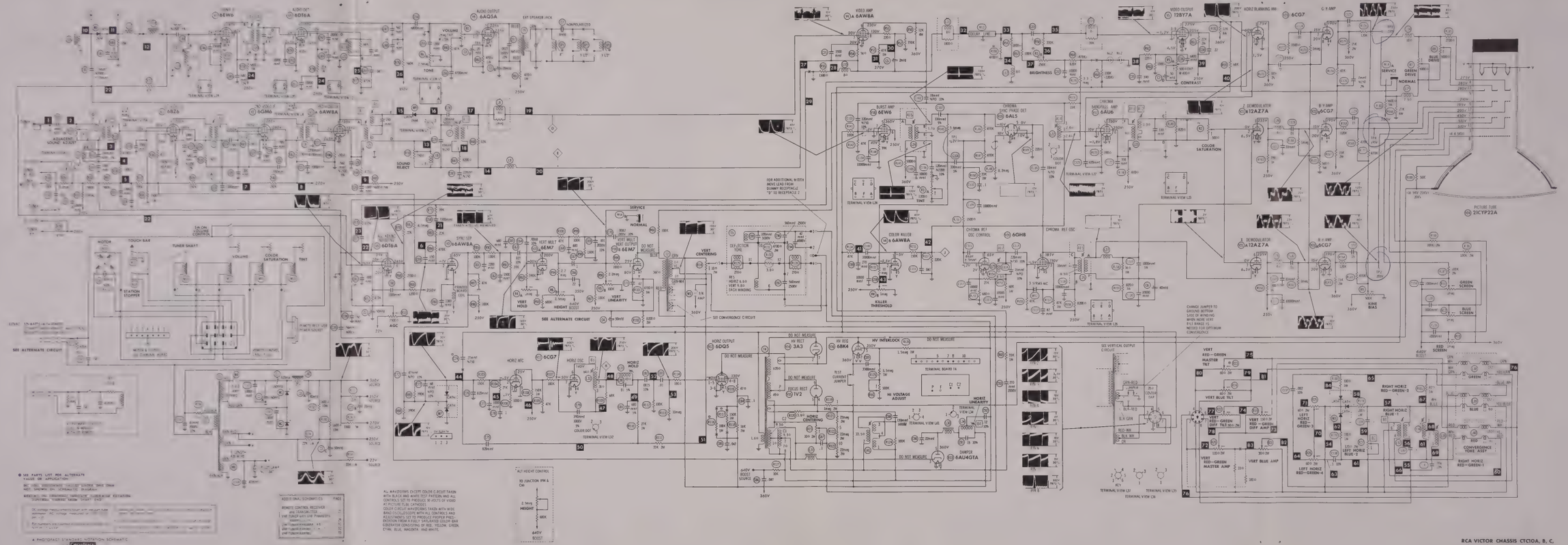
MANUFACTURER	Radio Corporation of America, RCA Victor Tele. Div., Camden 8, New Jersey
TYPE SET	Color Television Receiver
TUBES	TV: VHF - Twenty-Six, UHF - Twenty-Seven Remote Control Receiver: Six
TRANSISTOR	Remote Control Transmitter: One
POWER SUPPLY	110 - 120 Volts AC, 60 Cycle
RATING	VHF/UHF w/Remote Control: 352 Watts, 3.65 Amp. @ 117 Volts AC (While Tuning) 325 Watts, 3.4 Amp. @ 117 Volts AC (Not Tuning) VHF/UHF TV Only: 290 Watts, 3 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

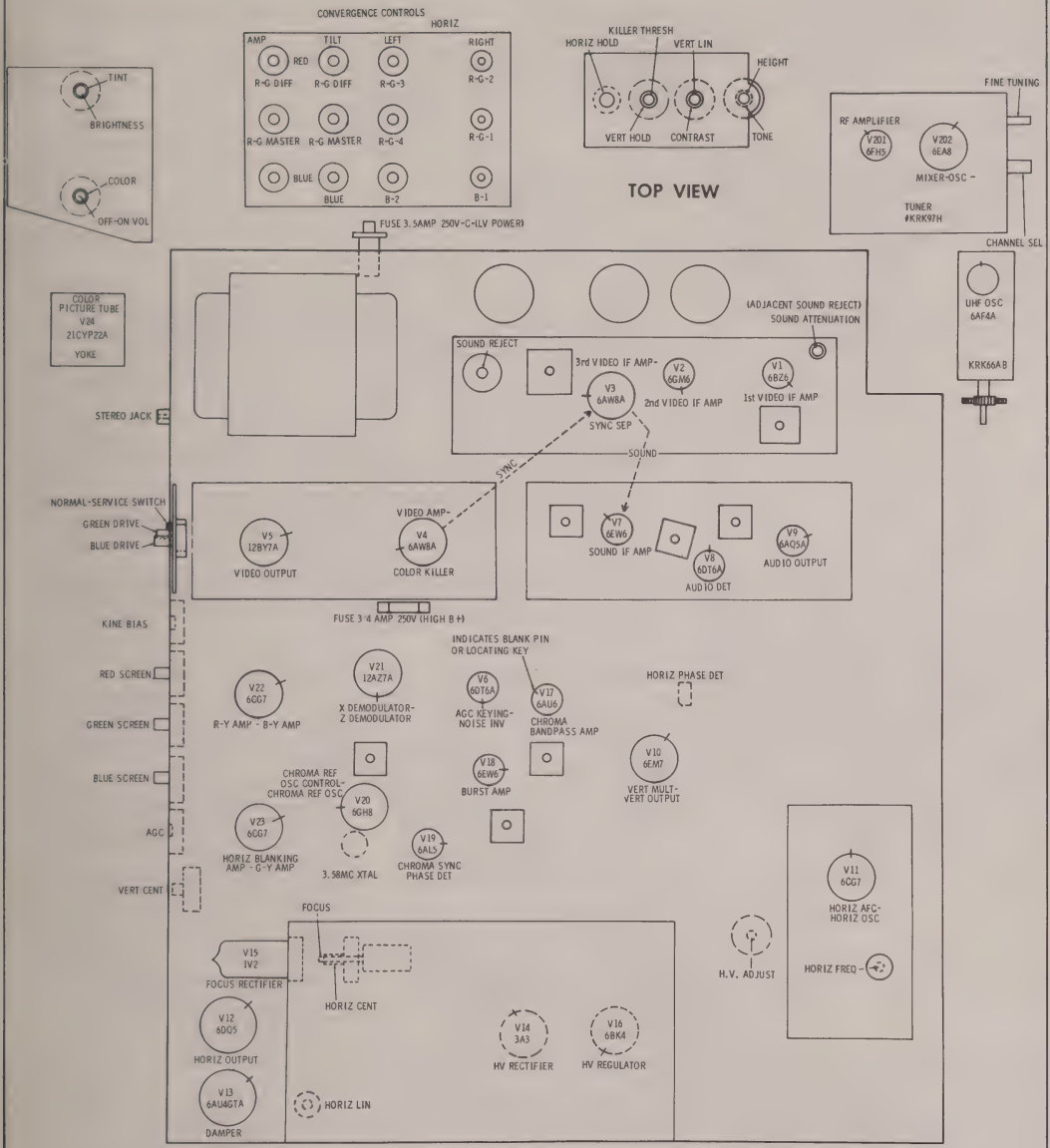
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KB434

SET 517 FOLDER 2


AUDIO OUT 6DT6A
AUDIO OUTPUT 6AQ5A
EXT SPEAKER JACK
VOLUME
TONE
SOUND REJECT
ADJACENT SOUND ADJUST
6GM6
6AW8A
6DT6A
SYNC SEP 16AW8A
VERT MULT 6EM7
VERT OUTPUT 6EM7
VERT HOLD
VERT HEIGHT
VERT LINEARITY
VERT CENTERING
SERVICE
NORMAL
SEE ALTERNATE CIRCUIT
SEE CONVERGENCE CIRCUIT
AGC
HORIZ AFC 6CG7
HORIZ OSC
HORIZ HOLD
HORIZ OUTPUT 6DQ5
HV RECT 3A3
HV REG 6BK4
HV INTERLOCK
HI VOLTAGE ADJUST
FOCUS RECT
HORIZ LINEARITY
DAMPER 6AU4GTA
VIDEO AMP 6AW8A
BURST AMP 6EW6
CHROMA SYNC PHASE DET 6AL5
COLOR KILLER 6AW8A
KILLER THRESHOLD
CHROMA BANDPASS AMP 6AU6
CHROMA REF OSC CONTROL
CHROMA REF OSC 6GH8
VIDEO OUTPUT 12BY7A
HORIZ BLANKING AMP
BRIGHTNESS
CONTRAST
COLOR SATURATION
TINT
6CG7
G-Y AMP
B-Y AMP
R-Y AMP
R DEMODULATOR 12AZ7A
G DEMODULATOR 12AZ7A
B DEMODULATOR 12AZ7A
PICTURE TUBE 21CYP22A
SERVICE
NORMAL
GREEN DRIVE
BLUE DRIVE
KINE BIAS
GREEN SCREEN
BLUE SCREEN
RED SCREEN
CONVERGENCE YOKE ASSY
VERT RED—GREEN MASTER TILT
VERT BLUE TILT
VERT RED—GREEN DIFF AMP
VERT RED—GREEN MASTER AMP
VERT BLUE AMP
LEFT HORIZ RED—GREEN
LEFT HORIZ BLUE
RIGHT HORIZ RED—GREEN
RIGHT HORIZ BLUE
SEE VERTICAL OUTPUT CIRCUIT
TERMINAL BOARD TB
TERMINAL VIEW L1
TERMINAL VIEW L2
TERMINAL VIEW L3
TERMINAL VIEW L4
TERMINAL VIEW L5
TERMINAL VIEW L6
TERMINAL VIEW L7
TERMINAL VIEW L8
TERMINAL VIEW L9
TERMINAL VIEW L10
TERMINAL VIEW L11
TERMINAL VIEW L12
TERMINAL VIEW L13
TERMINAL VIEW

TUBE PLACEMENT CHART



TV ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The high voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A19 ..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A20 ..... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

VIDEO IF ALIGNMENT

Connect the negative lead of a 6 volt bias supply to point (A). Positive to chassis.
Connect the negative lead of a 15 volt bias supply to point (B). Positive to chassis.
Connect the negative lead of a 15 volt bias supply to pin 2 of V23. Positive to chassis.
Connect a clip lead from point (E) to chassis. Preset Sound Reject (R18) at 75% clockwise rotation. Preset Adjacent Sound Adjust (R17) at 50% rotation. Video IF Shield must be in place during alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V302). Low side to chassis.	43.8MC (Unmod.)	4	DC probe thru 10K to point (D). Common to chassis. Use negative scale.	A1	Adjust for maximum deflection. Use peak with core nearest printed board end of coil. Maintain VTVM reading of 1.5 volts by adjusting signal generator output.
2.	"	"	42.5MC	"	"	A2	"
3.	"	"	45.75MC	"	"	A3	"
4.	"	"	44.0MC	"	"	A4	"
5.	"	"	"	"	"	Mixer Plate Coil	Adjust for maximum deflection with peak at top end of coil.
6.	"	"	41.25MC	"	"	A5, R18	Adjust A5 and Sound Reject (R18) simultaneously for MINIMUM deflection with slug away from chassis. Reduce bias at point (A) if necessary for sufficient indication.
7.	"	"	47.25MC	"	"	A6, R17	Adjust A6 and Adjacent Sound (R17) simultaneously for MINIMUM deflection with slug away from chassis.

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a .001mfd capacitor in series with a 180Ω resistor from pin 5 (plate) of 6GM6 (V2) to chassis with the resistor next to chassis.
Connect a 1000mmf capacitor across the scope leads.
The Video IF shield must be in place during alignment.
Connect the DC probe of the VTVM to point (B). Common to chassis. (Use negative scale.)
Use 10MC sweep unless otherwise noted.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V302). Low side to chassis.	45MC	42.17MC 45.75MC	4	Vert. Amp. thru demodulator probe (Fig. 1) to pin 5 (plate) of 6BZ6 (V1). Low side to chassis.		Set sweep output for .1 volt peak to peak on scope. Retouch Mixer Plate Coil and A4 for maximum gain and symmetry of response similar to Fig. 2. Reduce bias to -4 volts at point (A) if necessary.
9.	"	"	"	47.25MC	"	"		Retouch A6 and R17 to place marker in trap notch as in Fig. 2. Remove capacitor and resistor load from 6GM6 (V2). Increase bias at point (A) to -6 volts. Remove .001 mfd and 180Ω from pin 5 of V2.
10.	"	"	"	41.65MC 42.17MC 42.75MC 45.0MC 45.75MC	"	Vert. Amp. thru 10K to point (D). Low side to chassis.		Use 3 volts peak to peak on scope. Retouch A1, A2 and A3 for response similar to Fig. 3 with markers as shown. A1 controls tilt, A2 affects 42.17MC side of curve and A3 affects 45.75MC side. Connect a .001mfd capacitor from point (G) to chassis.
11.	"	"	"	41.25MC	"	"		Retouch A5 and R18 to place 41.25MC in trap notch if necessary. Remove .001mfd.
12.	Fig. 4	Across VHF Antenna Terminals thru matching network (Fig. 4).	All VHF Channels separately	42.17MC 45.0MC 45.75MC	All VHF Channels separately	"		Decrease bias at point (B) to -3 volts. SLIGHTLY retouch A1, A2 and A3 to correct for any overall tilt that is approximately the same on all channels. Repeat step 11.

SEE PAGE 17 FOR WAVEFORMS

TV ALIGNMENT INSTRUCTIONS (cont)

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.
In the following steps, the signal level may be reduced by disconnecting the lead from the terminal at point (F) and connecting a 1meg potentiometer from point (F) to chassis. The lead is then connected to the center arm of the control. This control is then used to control the level of the signal applied to the Sound IF strip. Start alignment with the control turned to maximum signal.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru diode probe (Fig.5) to pin 1 (grid) of 6DT6A (V8). Common to chassis. Connect scope across voice coil of speaker.	A7	Connect a jumper from pin 7 (grid 3) of V8 to chassis. Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14.	"	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Peak with maximum core separation. Repeat steps 13 and 14.
15.	Remove the diode probe and jumper. Turn off signal generator and tune in strongest signal in the area. Set volume control for normal volume. Set A10 so that core is flush with top of coil form. Observe scope and listen to sound. Change bias at point (A) to zero. Adjust A10 clockwise to a peak. Continue clockwise to second louder peak and adjust for maximum output at this second peak. Gradually decrease signal until sound becomes distorted. Maintain distorted signal and adjust A8 for maximum output.						

ALTERNATE SOUND IF ALIGNMENT USING FM GENERATOR

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ FM Mod. 15KC Swp.)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 1 (grid) of 6DT6A (V8). Common to chassis.	A7	Connect a jumper from pin 7 (grid 3) of V8 to chassis. Adjust for maximum deflection. Set generator for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14.	"	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator for 1 volt on VTVM. Remove VTVM, diode probe and jumper.
15.	"	"	"	"	Use SCOPE Across speaker voice coil	A10	Starting with the slug fully counterclockwise adjust to a peak. Continue turning clockwise until a second peak is reached and adjust for maximum at this second peak. Decrease signal until detector breaks out of lock as indicated by jagged portions of the sine wave on the scope. Retouch A8 for symmetrical breakout similar to Fig. 6.

4.5MC TRAP ALIGNMENT

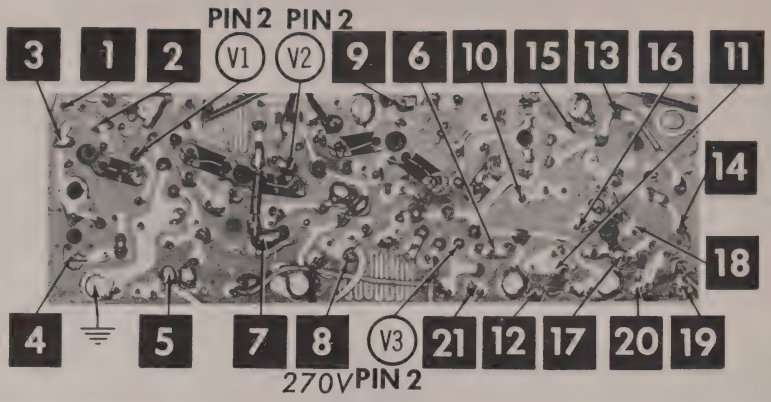
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
16.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ AM)	Any non-interfering channel	Use SCOPE Across speaker voice coil	A11	Adjust for MINIMUM 400∿ indication on scope.

CHROMA BANDPASS ALIGNMENT

Connect the negative lead of a 7 volt bias supply to point (J). Positive to chassis.
Connect a clip lead from point (E) to chassis.
Turn Color Saturation Control fully clockwise.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17.	.1mfd	High side to pin 1 (grid) of 6AU6 (V17). Low side to chassis.	3.58MC (3-5MC Swp.)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V2l). Low side to chassis.	A12, A13	Adjust for response similar to Fig. 8 with equal marker height.
18.	Turn the Brightness and Contrast controls fully counterclockwise. Connect 330Ω resistor and 4mfd capacitor in series from plate (Pin 5) of 6AU8 (V17) to chassis.							
19.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V302). Low side to chassis. Connect high side of separate marker generator to ungrounded tube shield of Chroma Bandpass Amp. (V17). Low side to chassis.	45MC (10MC Swp.)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V2l). Low side to chassis.	A14	Remove clip lead between point (E) and chassis. Adjust A14 for response similar to Fig. 9. Peak with core nearest chassis end of coil form.

SEE PAGE 17 FOR WAVEFORMS



A Howard W. Sams CIRCUITRACE* Photo

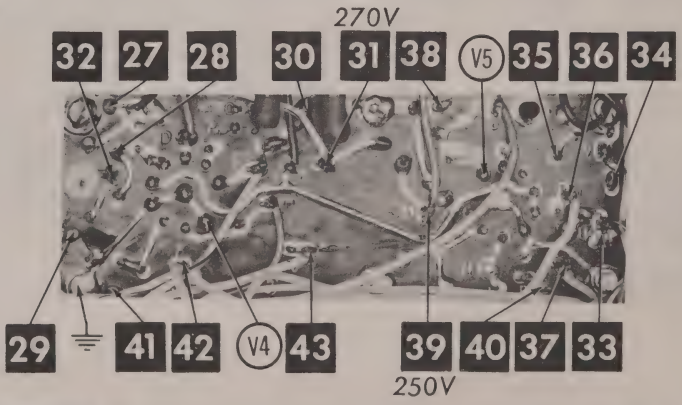
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VIDEO I F PRINTED BOARD

A Howard W. Sams CIRCUITRACE* Photo

SOUND PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



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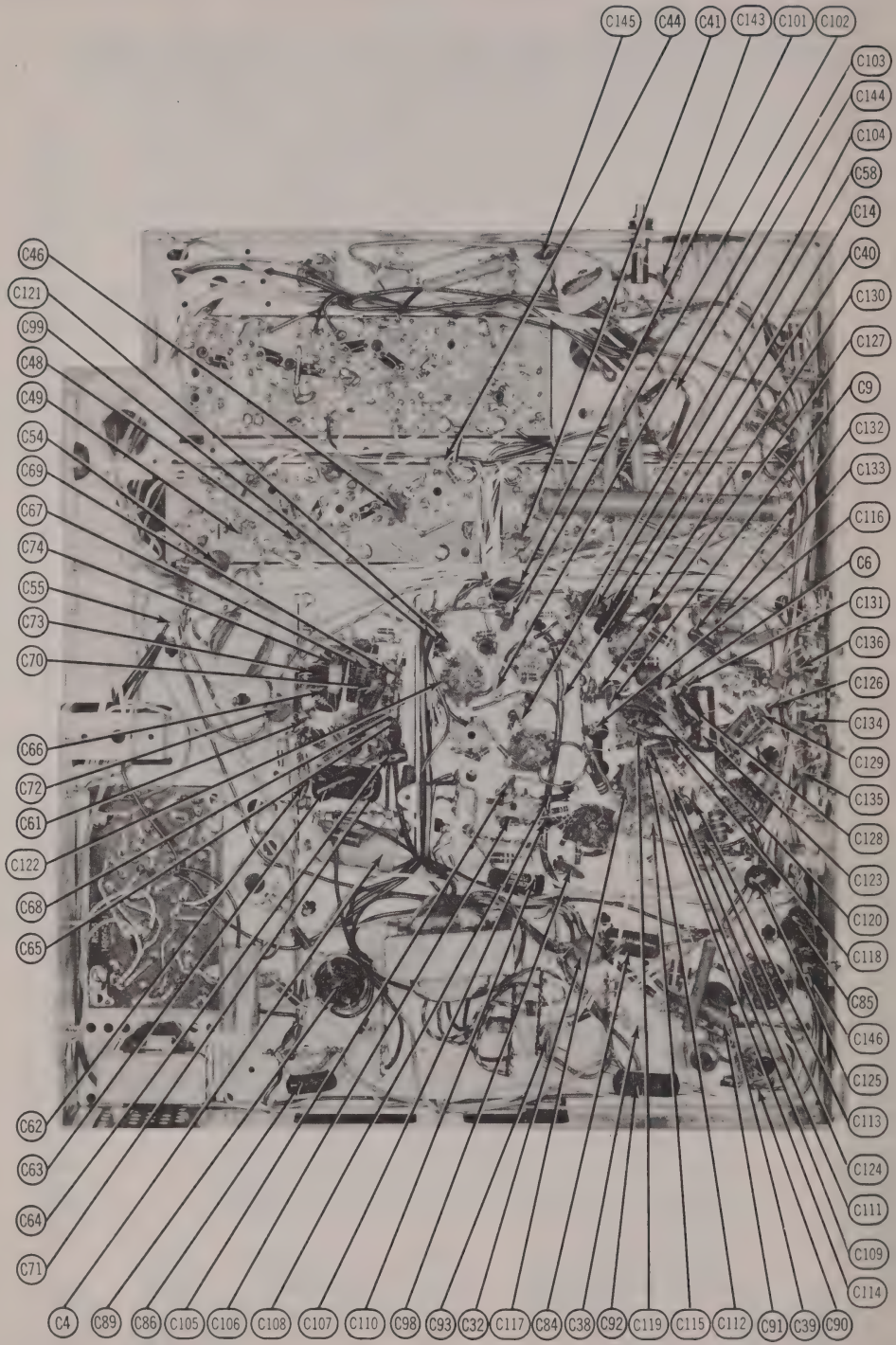
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VIDEO AMP., OUTPUT, COLOR KILLER PRINTED BOARD

VIDEO IF PRINTED BOARD



CHASSIS BOTTOM VIEW - CAPACITOR IDENT.

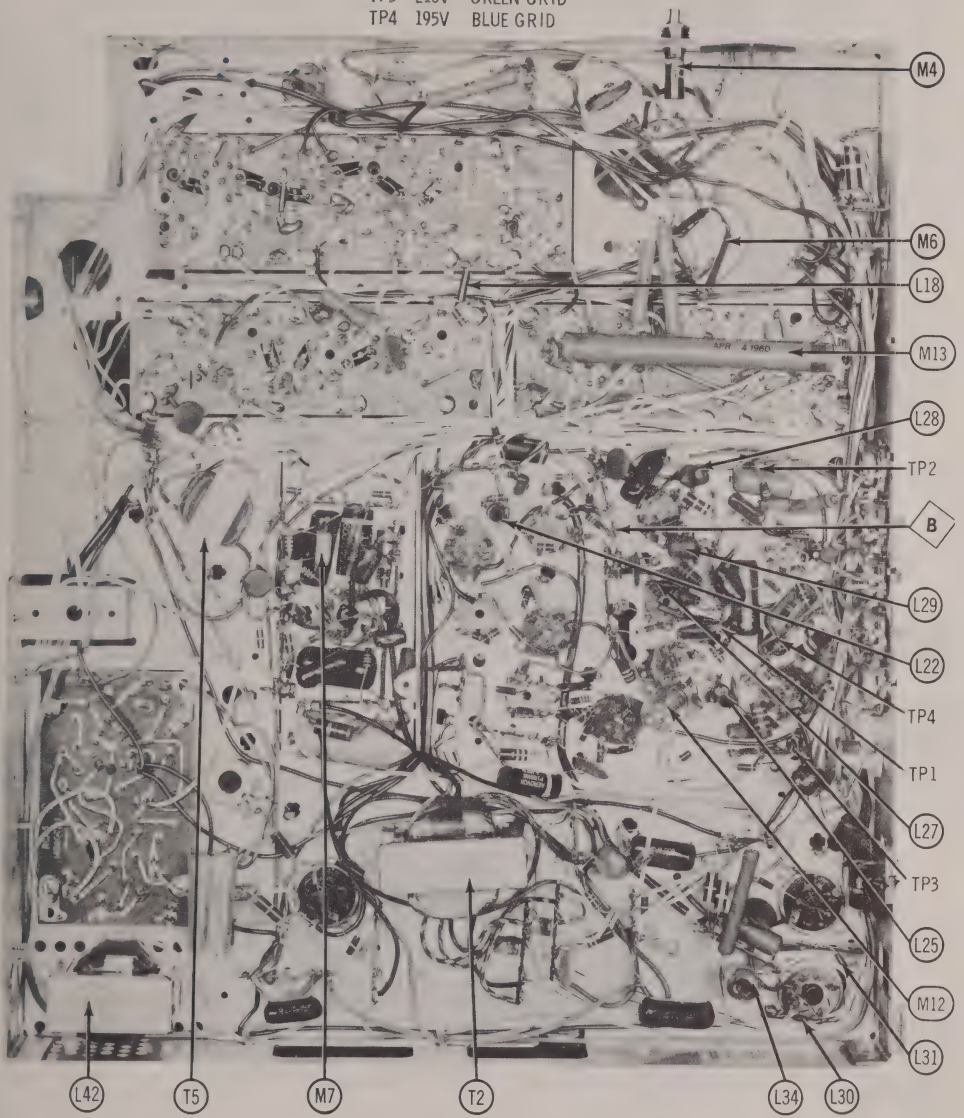
BLOCK DIAGRAM

CHASSIS BOTTOM VIEW - RESISTOR IDENT.

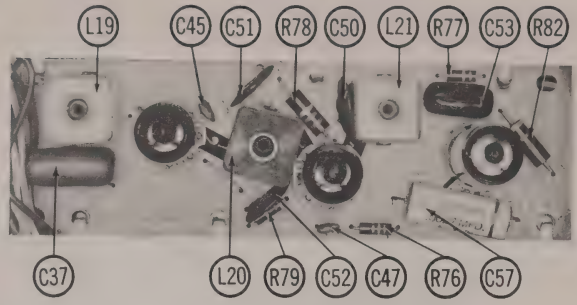
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	220K	1550Ω	0Ω	.1Ω	▪220Ω	▪220Ω	1500Ω		
V2	6GM6	†80K	INF	†16K	†16K	†3400Ω	†3400Ω	INF		
V3	6AW8A	0Ω	4.7meg	†35K	.1Ω	0Ω	150Ω	0Ω	†6900Ω	†6900Ω
V4	6AW8A	0Ω	6meg	370K	0Ω	.1Ω	●1000Ω	6000Ω	†45K	†12K
V5	12BY7A	● 400Ω	●700K	NC	.1Ω	.1Ω	0Ω	†5000Ω	†23K	0Ω
V6	6DT6A	50K	● 1000Ω	0Ω	.1Ω	900K	†4000Ω	● 470K		
V7	6EW6	7.5Ω	47Ω	0Ω	.1Ω	†7600Ω	†7600Ω	0Ω		
V8	6DT6A	4.4Ω	470Ω	.1Ω	0Ω	†580K	†28K	470K		
V9	6AQ5A	NC	470Ω	.1Ω	0Ω	†1600Ω	†1300Ω	● 0Ω		
V10	6EM7	● 2.2meg	†380Ω	3000Ω	● 700K	●†3meg	0Ω	.1Ω	0Ω	
V11	6CG7	†45K	1meg	1000Ω	.1Ω	0Ω	†60K	†220K	0Ω	0Ω
V12	6DQ5	10meg	0Ω	0Ω	†12K	10meg	0Ω	.1Ω	†12K	TOP CAP †50Ω
V13	6AU4GTA	NC	NC	¶	NC	†30Ω	NC	0Ω	.1Ω	
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †650Ω
V15	1V2	NC	NC	NC	66meg	66meg	TP	NC	NC	†50Ω
V16	6BK4	†30Ω	†16K	NC	NC	●900K	NC	†16K	NC	TOP CAP INF
V17	6AU6	220K	0Ω	.1Ω	0Ω	†1300Ω	†1300Ω	390Ω		
V18	6EW6	45K	39K	0Ω	.1Ω	†1000Ω	†820Ω	0Ω		
V19	6AL5	5.8meg	5.8meg	0Ω	.1Ω	220Ω	0Ω	220Ω		
V20	6GH8	†50K	47K	†48K	0Ω	.1Ω	†9000Ω	0Ω	680Ω	6meg
V21	12AZ7A	†4700Ω	●100Ω	820Ω	.1Ω	.1Ω	†4700Ω	● 100Ω	820Ω	0Ω
V22	6CG7	†15K	1meg	560Ω	.1Ω	0Ω	†15K	1meg	560Ω	0Ω
V23	6CG7	†100K	1meg	390Ω	.1Ω	0Ω	†12K	1meg	560Ω	0Ω
V24	21CYP22A	†16K	†125K	● †130K	†8000Ω	● †5200Ω	†125K	● †140K	Pin 9 67meg	Pin 11 ● †110K
				Pin 12 †125K	Pin 13 ● †5000Ω	Pin 14 †16K				
V301	6FH5	47Ω	3.3meg	0Ω	.1Ω	†14K	0Ω	47Ω		
V302	6EA8	†1300Ω	100K	▲1000Ω	0Ω	.1Ω	▲2000Ω	0Ω	INF	▲5600Ω
V401	6AF4A	*†17K	5600Ω	.1Ω	0Ω	15Ω	5600Ω	*†17K		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

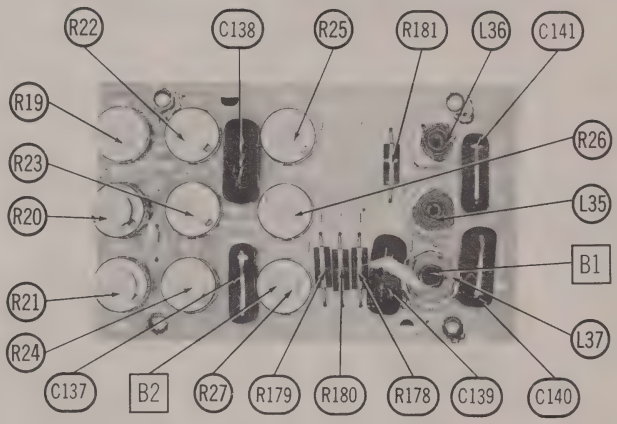
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M1.
* MEASURED IN "UHF" POSITION.
‡ MEASURED FROM PIN 3 OF V13.
▬ 6.3VAC MEASURED ACROSS FILS.
▪ MEASURED FROM PIN 2 OF V2.
NC NO CONNECTION
▲ MEASURED FROM PIN 8 OF V202.
TP TIE POINT



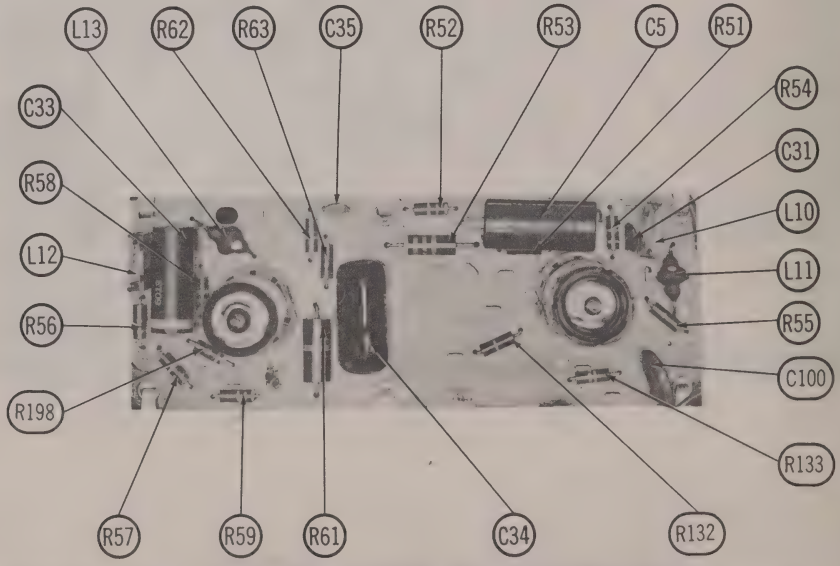
CHASSIS BOTTOM VIEW - TEST POINT, INDUCTOR, MISC., TRANSFORMER IDENT.



SOUND PRINTED BOARD



CONVERGENCE PRINTED BOARD



VIDEO AMP., OUTPUT, COLOR KILLER PRINTED BOARD

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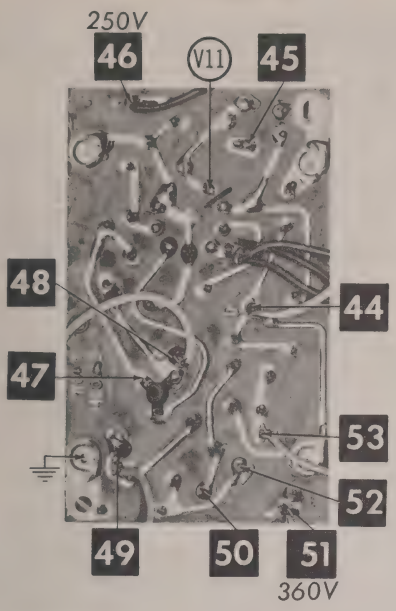
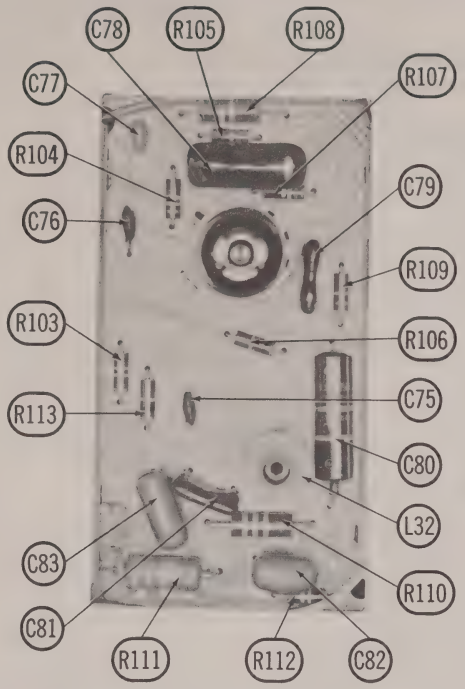
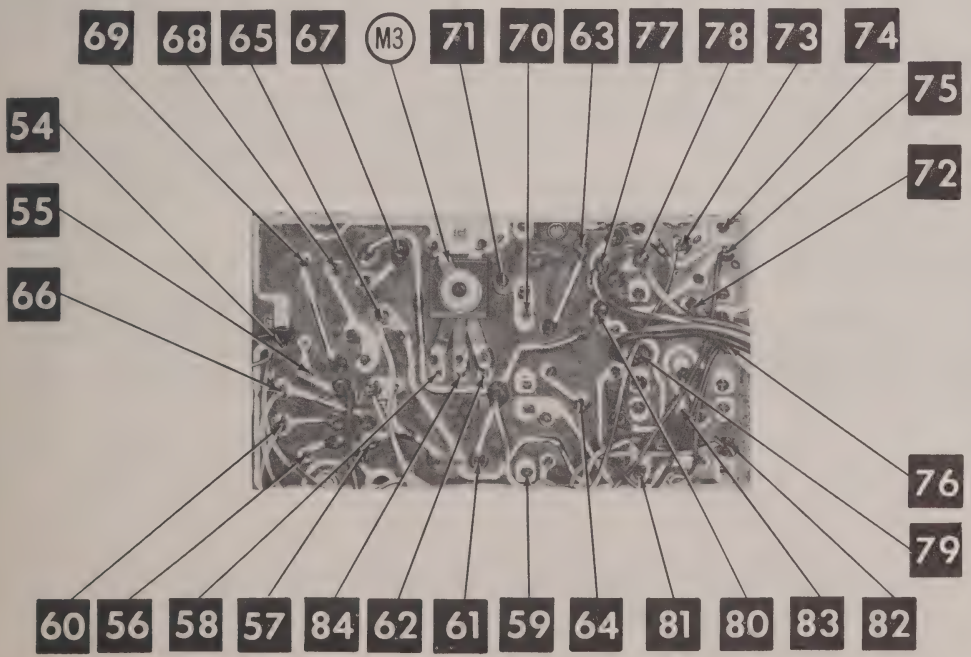




ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

HORIZ. AFC, OSC. PRINTED BOARD



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CONVERGENCE PRINTED BOARD

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools: B1, R-G-1, R-G-2 .....
GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

Connect a 0-500MA meter in series with the cathode circuit of the Horizontal Output tube (V12). Connect a .47mfd capacitor across the meter terminals. Connect a 0-1500 microammeter in series with the cathode circuit of the HV Regulator (V16). Connect the Vertical Amp. of the scope to point (K). Low side to chassis. Connect the DC probe of the VTVM thru a high voltage probe to the High Voltage Rectifier "cup". Common to chassis.

Set the Focus to the center of its range. Set the High Voltage Adjust control at two thirds clockwise rotation.

Tune the receiver to a station signal and synchronize the picture. Adjust the Horizontal Hold (Waveform Slug) for a waveform similar to Fig. 11 with the round and sharp peaks at equal amplitudes. Keep the picture in sync during this adjustment with the Horizontal Frequency (B3).

Adjust the Horizontal Linearity Slug (B4) for MINIMUM current indication on the 500MA meter, not to exceed 200MA.

Adjust the High Voltage Adjust for 24KV on the VTVM. Check the current reading on the 0-1500 microammeter. It should not exceed 850 microamps.

AGC ADJUSTMENT

Tune in the strongest station signal in the area. Connect the Vertical Amp. of the scope thru a low capacity probe to point (E). Common to chassis. Adjust the AGC control for 11 volts peak to peak on the scope.

COLOR AFC ALIGNMENT

Set the Tint control to the center of its range. Turn the Killer control fully counterclockwise. Connect the DC probe of the VTVM thru 470K to pin 1 (cathode) of the Phase Detector (V19). Common to chassis. Connect the Color Bar Generator to the antenna terminals. Connect a short clip lead from pin 1 (grid) of the Burst Amplifier to chassis. Adjust A15 for maximum deflection on the VTVM. If no reading is obtained the 3.58 MC Osc. is not operating, in which case A17 should be adjusted to start the Osc. and make the color lock in on the screen. Adjust A15 for maximum deflection.

Adjust A16 for maximum deflection on the VTVM making sure that the 3.58MC Osc. is running and locked in.

Remove the clip lead from the grid of the Burst Amplifier. Connect clip lead from TP-1 to chassis. Disconnect VTVM from pin 1 of the Phase Detector. Adjust A17 for zero beat while observing the screen. (Color bars will stand still on the screen or drift very slowly).

Remove the clip lead from TP-1 and repeat adjustment of A17 using a low chroma low level signal. Adjust for zero beat and best hold.

Connect the Vertical Amp. of scope to TP-2. Low side to chassis. Observe bar pattern on scope and retouch A16 if necessary to obtain proper response curve similar to R-Y signal in Fig. 12 with equal change when rotating the Tint control from one extreme to the other. Return the Tint control to the center of its range. Move the scope connection to TP-4. Check for B-Y signal as shown in Fig. 12. Move the scope connection to TP-3. Check for G-Y signal as shown in Fig. 12.

With a strong black and white signal, adjust the Killer Threshold control so that all color disappears from the picture. Recheck with a color signal to make sure that the setting is not killing on color.

PRELIMINARY CONVERGENCE ADJUSTMENT

Connect the RF output of a white dot generator to the antenna terminals. Preset all Red, Green and Blue Horizontal and Vertical Convergence controls and coils to the center of their ranges.

Adjust the Red, Green and Blue Convergence Magnets and the Lateral Magnet to produce a white dot in the center of the screen. Keep the receiver in sharp focus while making these adjustments. The Convergence Magnets may be reversed to produce a greater range of adjustment if necessary.

COLOR PURITY ADJUSTMENTS

If necessary, demagnetize picture tube and associated components. Set the red tabs of the Purity Magnet together.

Loosen the yoke clamp and slide the deflection yoke to the rear as far as possible. Shunt TP-3 & TP-4 to chassis thru individual 100K Resistors.

Slide the Purity Magnet around the neck of the picture tube and at the same time spread the red tabs apart to produce a uniform red screen area at the center of the screen. Move the yoke forward and adjust for best overall red screen without neck shadow. Tighten yoke clamp.

GRAY SCALE ADJUSTMENT

Turn the Bias and Screen controls fully counterclockwise. Move the "Normal-Service" switch on the rear apron of the chassis to "Service" position. Advance the Screen controls so that each control just produces a horizontal line on the screen.

If any one of the Screen controls fail to provide a line, advance Bias control slightly. Readjust other screen controls so the screen is just lighted. Return the "Normal-Service" switch to "Normal". Alternately adjust the Red and Green Video Drive controls to produce a normal black and white picture. Check the picture from lowlight areas to highlight areas at all brightness levels to check the picture for proper tracking.

VERTICAL CONVERGENCE ADJUSTMENTS

Recheck the "Preliminary Convergence Adjustments" for correct setting of the Red, Green and Blue Magnets and Lateral Magnet to produce a white dot in the center of the screen. Loosen the two screws holding the Convergence Board, slide the board to the left and remove. Fasten the board to the two screws provided on the top rear rail of the cabinet with the controls facing forward so that convergence adjustments may be made from the front of the receiver. Slots are provided in the lower edge of the board for making this mounting.

Switch the dot generator to vertical bars. Connect a 100K Resistor from TP-4 to chassis.

Referring to the center vertical bar, adjust the Vertical R-G Master Amp. control to converge the red and green bars at the bottom end. Adjust the Vertical R-G Master Tilt to converge the red and green bars at the top end. Touch up both controls for best convergence along the entire length of the center vertical bar.

Switch the generator to horizontal bars. Referring to the center portion of the lower horizontal bars, adjust the Vertical R-G Differential Amp. control to converge the red and green bars. Adjust the Vertical R-G Differential Tilt control to converge the center portion of the top horizontal green and red bars. Retouch both controls until the center portion of all red and green horizontal bars are converged.

Switch the generator to the dot or cross hatch pattern and converge the center area of the screen using the convergence magnets. Switch back to the horizontal bars. Remove the 100K Resistor from point TP-4. Advance the Vertical Blue Amp. control to cause displacement of the center portion of the bars at the top and bottom of the screen. Adjust the Vertical Blue Tilt control to cause the vertical displacement of the center portion of the horizontal bars to be equal at top and bottom. Switch the generator to dots or cross hatch and again converge the center area of the screen. Retouch the Vertical Blue Tilt and Amp. controls for best convergence along the vertical center of the screen.

HORIZONTAL CONVERGENCE ADJUSTMENTS

Switch the generator to cross hatch pattern and recheck convergence in the center area.

Adjust B-1 to make the blue line at the right center a straight line.

Adjust B-2 to make the blue line from the center to the left side of the screen a straight line.

Adjust R-G-1 to make the vertical lines at the right side of the screen converge.

Adjust R-G-2 to make the horizontal red and green lines at the right side converge.

Adjust B-1 to make the blue line at the right center fall on the converged red and green line. Retouch R-G-1 for convergence of the vertical lines at the right side.

Adjust R-G-3 to make vertical lines at the left side converge. Adjust R-G-4 to make the red and green horizontal lines at the left side of the screen converge. After adjusting R-G-4 repeat the adjustment of R-G-3 to compensate for any interaction. Retouch B-2 to make the blue line at the left center fall on the converged red and green lines.

The screen should now show proper convergence.

After completion of the vertical and horizontal convergence, repeat the Gray Scale Adjustment.

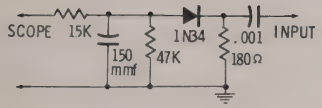


FIG. 1

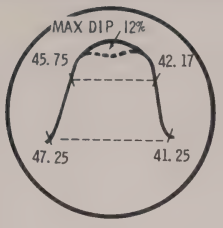


FIG. 2

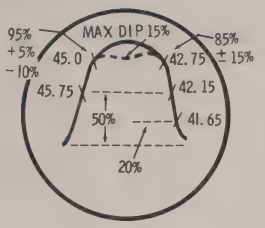


FIG. 3

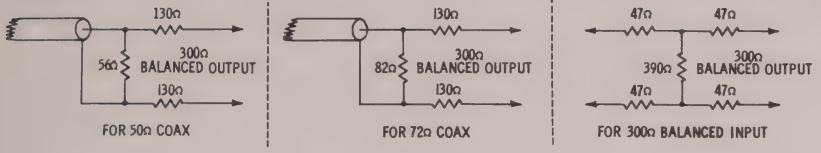


FIG. 4

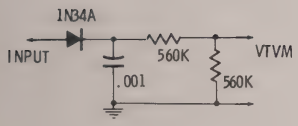


FIG. 5

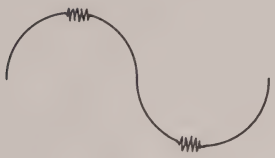


FIG. 6

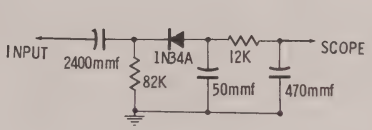


FIG. 7

FIG. 8

FIG. 9

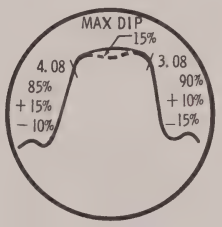


FIG. 10

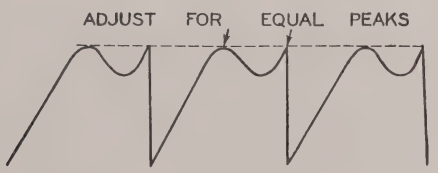


FIG. 11

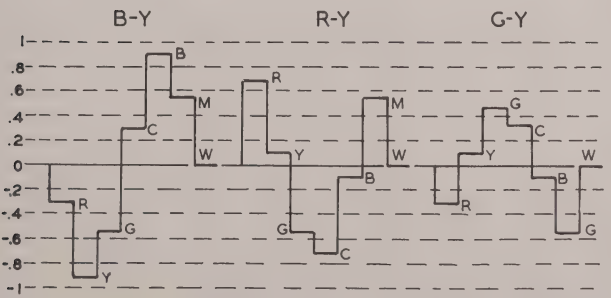
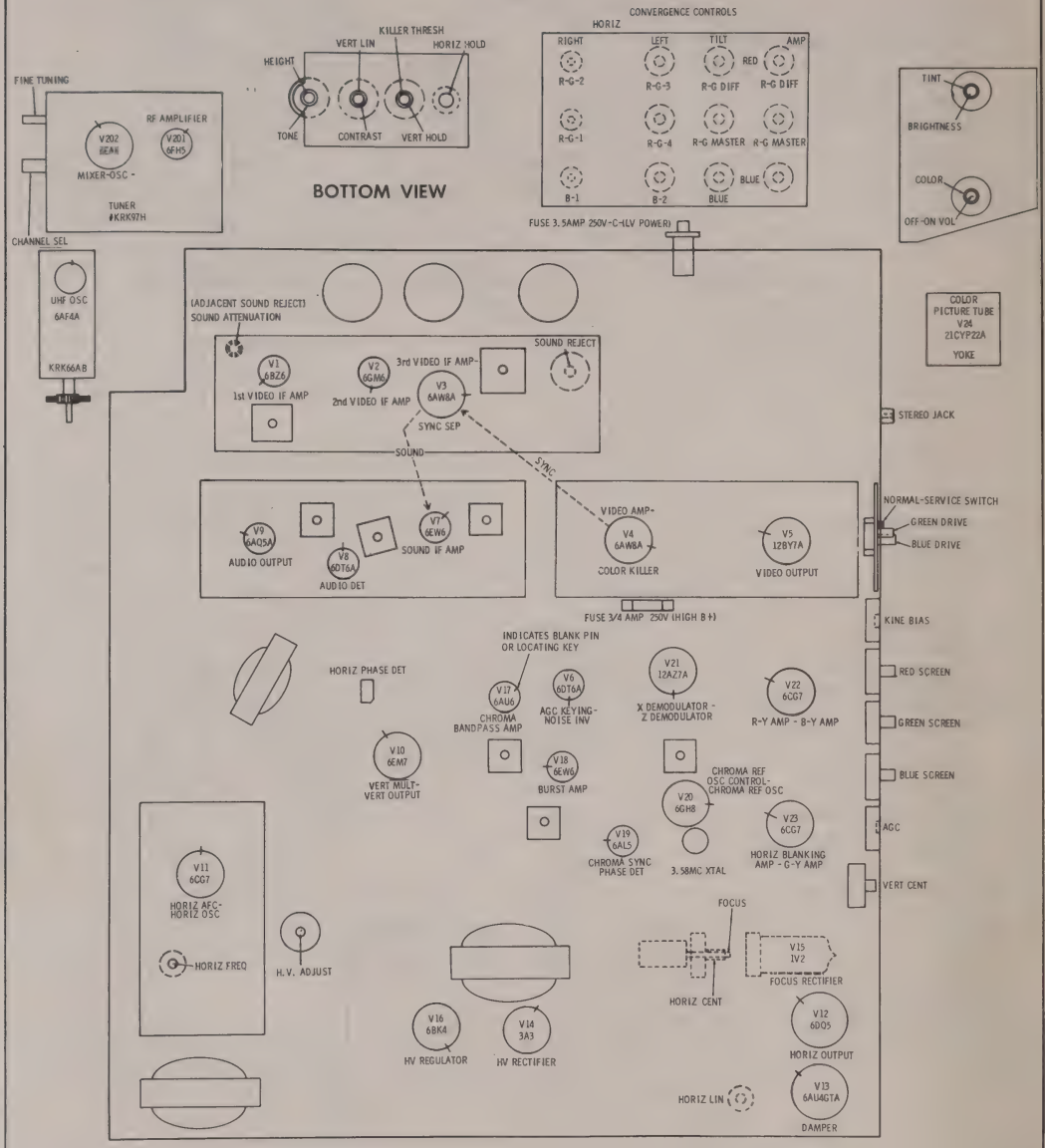


FIG. 12

TUBE PLACEMENT CHART



TV PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6
V2	2nd Video IF Amp.	6GM6
V3	3rd Video IF Amp. - Sync Sep.	6AW8A
V4	Video Amp. - Color Killer	6AW8A
V5	Video Output	12BY7A
V6	AGC Keying - Noise Inv.	6DT6A
V7	Sound IF Amp.	6EW6
V8	Audio Det.	6DT6A
V9	Audio Output	6AQ5A
V10	Vert. Mult. - Vert. Output	6EM7
V11	Horiz. AFC - Horiz. Osc.	6CG7
V12	Horiz. Output	6DQ6
V13	Damper	6AU4GTA
V14	HV Rectifier	3A3
V15	Focus Rectifier	1V2
V16	HV Regulator	6BK4
V17	Chroma Bandpass Amp.	6AU6
V18	Burst Amp.	6EW6
V19	Chroma Sync Phase Det.	6AL5
V20	Chroma Ref. Osc. Control - Chroma Ref. Osc.	6GH8
V21	X Demodulator - Z Demodulator	12AZ7A
V22	R-Y Amp. - B-Y Amp.	6CG7
V23	Horiz. Blanking Amp. - G-Y Amp.	6CG7

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V24	21CYP22A		21CYP22A ①			① Aluminized

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	160	250	106364	AFH1-31-75	XA0315	FP131	TMS-1480	TVL-1540	
C2A	▲160	250	109240				TMT-3259	TVLS-3711.2*	
B	■20	450					TD-50-50	TVA-1709	
C	▲50	75							
D	50	50							
C3A	▲80	450	109239	AFH4-86-25		FP385.5 TT25X20	TMQ-4589	TVLS-3744.5* TVA-1716	
B	▲10	450							
C	■50	450							
D	20	25							
C4	50	150	109227	PRS1480	BR5015	TC49	TD-50-150	TVA-1414	
C5	2	350	78920	PRS1705	BR245	TC595	TD-2-450	TVA-1701	
C6	40	25	105758	PRS1470	BR4015	TC48	TD-40-150	TVA-1413	
C7	8	10NP	102847	PRS7315	BBR8-150	TCN108		TVANS-1112*	
C8	40	50NP	106883	PRS7450	BR4015	TC492 †		TVANS-1308.1*	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
† Use 2 units. Connect negative terminals together. Connect positive terminals into circuit the same as the original non-polarized unit.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C10	9 NPO 5%		NPO-SI 10	TCZ-10	C10V9C	CCTO-100	CNO-410	10TCC-Q10
C11	150 NPO 5%			DTZ-150			CNO-315	10TCC-T15
C12	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C14	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C15	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C16	680 N2200 10%	#102237				*		
C17	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C20	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C22	330		BPD-00033	DD-331	L10T33	CCD-331	B-333	10TS-T33
C23	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C24	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C25	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	560 N1500 5%	#109142				*	B-210	
C27	2200	(4700) †	BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C28	100 N033 10%	#105304				*		
C29	10 N150	#105303				*		10TCP-Q10
C30	22 N150	#109259				*		10TCP-Q22
C31	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C32	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C33	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C34	.22 200V		P288N-22		CUB2P22	2DP-4-224	GEM-2022	2TM-P22
C35	390		DI-390	DD-391	L10T39	CCD-391	B-339	10TS-T39
C36	6800		BPD-0068	DD-682	BYA10D68	CCD-682	B-268	5HK-D68
C37	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C38	150		DI-150	DD-151	L10T15	CCD-151	B-315	10TS-T15
C39	56 6000V		HVD-60-56	DD60-560		6CCD-560	6DY-456	75GA-Q56
C40	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C41	1000	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C42	1.5 N3300 ±.25mmf	#103411				*		
C43	10 N150	#105303				*		10TCP-Q10
C44	5 N1500 5%	#106384				*		
C45	680 10%		DI-680	DD-681	5R5T68	CCD-681	GP368	10TS-T68
C46	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C47	560		DI-560	DD-561	L10T56	CCD-561	B-356	10TS-T56
C48	47	Note 1	DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C49	47	Note 1	DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C50	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C51	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C52	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C53	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C54	6800		BPD-0068	DD-682	BYA10D68	CCD-682	B-268	5HK-D68

TV PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C55	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C56	4700		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C57	.0027 1600V 10%				DPMS-16D3	16DP-2-302	GEM-1623	MB-D3
C58	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C59	150		DI-150	DD-151	L10T15	CCD-151	B-315	10TS-T15
C60	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C61	2200		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C62	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C63	.027 600V 10%		P684CM-027		DPMS8S27	6DP-3-273	GEM-1613	6PS-S27
C64	.0068 400V 10%		V84C4D68-10%		PM6D47	6DP-1-682	GEM-16268	6TM-D68
C65	680		DI-680	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C66	.22 400V		P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C67	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C68	680		DI-680	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C69	.001 2000V 10%							
C70	.0082 1000V 10%		P1084CM-0082		DPMSI6D8	16DP-3-802	GEM-16282	MB-D8
C71	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C72	47 NPO 10%		NPO-DI 47	DTZ-47	C10Q47C	CCTO-470	CNO-447	10TCC-Q47
C73	68 NPO 10%		NPO-DI 68	DTZ-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C74	27 N750	Note 1		TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C75	820		DI-820	DD-821	BYA10T82	CCD-801	B-382	10TS-T82
C76	820		DI-820	DD-821	BYA10T82	CCD-821	B-382	10TS-T82
C77	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C78	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-102	GEM-201	2TM-P10
C79	390 1000V 5%	#107286				VCM-20-391J		
C80	.01 600V 5%		V84C6S1-5%		PM6S1			
C81	680 5%		1469-00068		5R5T68	CM-19B-681J	MCJ249	MS-368
C82	.0015 600V 10%		V84C6D15-10%		PM6D15	6DP-1-152	GEM-16215	
C83	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C84	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C85	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C86	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C87	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C88	130 6000V	#109229						
C89	3300		BPD-0033	DD-330	BYA10D33	CCD-332	B-233	5HK-D33
C90	22		DI-22	DD-220	L10Q22	CCD-220	GP422	10TS-Q22
C91	.15 200V 10%		V84C2P15-10%		PM2P15	2DP-3-154	GEM-2015	2TM-P15
C92	.12 600V 10%							
C93	270 2000V			DD30-271	HVB20T27	3CCD-271	2HV-327	30GA-T27
C94	47 4000V		HVD-60-47	DD60-470	HVB50Q47	6CCD-470	6DY-447	50GA-Q47
C95	100 3000V		HVD-30-100	DD30-101	HVB30T1	3CCD-101	3DY-310	30GA-T10
C96	560 2500V		HVD-30-560	DD30-561		3CCD-561	3DY-356	30GA-T56
C97	560 2500V		HVD-30-560	DD30-561		3CCD-561	3DY-356	30GA-T56
C98	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C99	270		DI-270	DD-271	L10T27	CCD-271	B-327	10TS-T27
C100	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C101	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C102	18 NPO 10%		NPO-SI 18	TCZ-18	C10Q18C	CCTO-180	CNO-418	10TCC-Q18
C103	120 N750-SI 10%		N750-SI 120	TCN-120	C10T12U	CCTN-121	CN7-312	10TCU-T12
C104	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C105	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C106	120 N2200 10%	#105242				*		
C107	330 5%		1469-00033		5R5T33	CM-19B-331J		MS-333
C108	330 5%		1469-00033		5R5T33	CM-19B-331J		MS-333
C109	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C110	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C111	4 ±.5mmf				C10V4C			10TCC-V39
C112	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C113	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C114	15 NPO 10%		NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C115	220 N750 10%		N750-DI 220	DTN-220	C10T22U	CCTN-221	CN7-322	10TCU-T22
C116	10 NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C117	82		DI-82	DD-820	L10Q82	CCD-820	GP482	10TS-Q82
C118	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C119	1000 5%		1469-001		5R5D1	CM-19B-102J	MCJ255	MS-21
C120	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C121	820		DI-820	DD-821	BYA10T82	CCD-821	B-382	10TS-T82
C122	330		DI-330	DD-331	L10T33	CCD-331	B-333	10TS-T33
C123	.22 400V		P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C124	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C125	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C126	7 N150 2%	#109258				*		10TCP-V68
C127	33		DI-33	DD-330	L10Q33	CCD-330	GP433	10TS-Q33
C128	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C129	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C130	33		DI-33	DD-330	L10Q33	CCD-330	GP433	10TS-Q33
C131	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C132	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C133	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C134	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C135	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C136	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C137	.082 200V 10%				DPMS6S82	6DP-4-823		6PS-S82
C138	.1 200V 10%		V84C2P1-10%		PM2P1	2DP-3-104	GEM-201	2TM-P10
C139	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C140	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C141	.056 400V 10%		P684CM-057		DPMS6S56	6DP-3-563		4PS-S56
C142	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C143	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C144	47		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C145	47 2000V 10%				HVA20Q47	VCM-20-470K	2DY-447	30TCY-Q50
C146	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C147	.033 200V		P288N-033	DD-303	CUB6S33	4DP-2-333	GEM-4133	4PS-S33

RCA Victor Part Number. † Alternate Value.

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

Note 1. May not be used in some versions.

TV PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg	½	107581					Volume Note 1
	170K Tap							
B	Switch							Power Off-On
R2A	500Ω	½	107582	F1-1			FA53L	Color Saturation Note 1
B	Shaft			Not Req.			OF1250	
R3A	1200Ω	½	107580	F1-7			■ UE4198	Tint Note 2
B	250K			R2-34				Brightness
R4A	1meg	½	109266					Vert. Hold
B	1meg							Killer Threshold
R5A	500Ω	½	109265					Contrast
	400Ω Tap							
B	100K							Vert. Linearity
R6A	2.5meg	½	109267					Tone
B	2.5meg							Height
R7A	5000Ω	½	109475	TT-10	B47-5000-S	B11-114	PTA53L	Green Drive
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R8A	5000Ω	½	109475	TT-10	B47-5000-S	B11-114	PTA53L	Blue Drive
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R9A	500K	½	109469	TT-59	B47-500K-S	B11-133	PTA55L	Kine Bias
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R10A	1meg	½	105205	TT-69	B47-1meg-S	B11-137	SU-54	Red Screen
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R11A	1meg	½	105205	TT-69	B47-1meg-S	B11-137	SU-54	Green Screen
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R12A	1meg	½	105205	TT-69	B47-1meg-S	B11-137	SU-54	Blue Screen
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R13A	75000Ω	½	109236	AB-13	A47-7500-S	B11-115	TA53L	AGC
B	Shaft			AK-1	FKS-1/4	TM4	Not Req.	
R14	10Ω	2(WW)	109242					Vert. Centering
R15	10Ω	2(WW)	109243					Horiz. Centering
R16A	500K	½	105210	TT-59	B47-500K-S	B11-133	SU-50	Hi Voltage Adjust
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R17	10K	1/4	106388					Adjacent Sound Adjust
R18	750Ω	½	105297				PTA751L	Sound Reject
R19	150Ω	2(WW)	109472					Vert. R-G Diff. Amp
R20	120Ω	2(WW)	106320					Vert. R-G Master Amp
R21	30Ω	2(WW)	106321					Vert. Blue Amp
R22	30Ω	2(WW)	106321					Vert. R-G Diff. Tilt
R23	60Ω	2(WW)	105059				PFL-60A	Vert. R-G Master Tilt Note 3
R24	60Ω	2(WW)	105059				PFL-60A	Vert. Blue Tilt
R25	60Ω	2(WW)	105059				PFL-60A	Left Horiz. R-G-3
R26	60Ω	2(WW)	105059				PFL-60A	Left Horiz. R-G-4
R27	120Ω	2(WW)	106320					Left Horiz. B-2

■ "STA-LOC" Equivalent: FB152R, RU254L, OF1250, IS1937
Note 1: Chassis CTC10A, B, C, D, T, U use dual (Part #107412).
Note 2: Chassis CTC10A, B, C, D, T, U use dual (Part #107413).
Note 3: Some versions may use 30Ω (Part #106321).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R28	470Ω				R74	6800Ω 3W	PW5 6800Ω	3G 6800Ω	#105662
R29	2.2meg				R75	470K			
R30	100K				R76	560K			
R31	10meg				R77	470K			
R32	560K				R78	27K 1W			
R33	4700Ω				R79	470Ω			
R34	1000Ω				R80	47K			
R35	150Ω				R81	470Ω 1W			
R36	47Ω				R82	470Ω 1W			
R37	220K				R83	22K			
R38	1500Ω 1W				R84	470K			
R39	150K †				R85	100K			
R40	150K †			†Matched Pair	R86	100K			
R41	4.7meg				R87	47K			
R42	100Ω				R88	390K			
R43	68Ω				R89	390K			
R44	470Ω				R90	100K			
R45	5600Ω 5W	PW5 5600Ω	5G 5600Ω	#105222	R91	39K			
R46	150Ω				R92	390K			
R47	8200Ω				R93	680K			
R48	12K				R94	2.2meg			
R49	10K				R95	1000Ω			
R50	12K 4W	PW5 12000Ω	4G 12000Ω	#109250	R96	2.2meg			
R51	220Ω				R97	100K			
R52	330K				R98	150K			
R53	47K 1W				R99	100K			
R54	56Ω				R100	47K			
R55	1500Ω				R101	4700Ω 3W	PW5 4700	3G 4700Ω	#104885
R56	1800Ω				R102	8200Ω 2W			
R57	100K				R103	150K			
R58	330K				R104	27K			
R59	68K				R105	47K			
R60	100K				R106	1000Ω			
R61	22K 2W				R107	180K			
R62	220Ω				R108	150K 1W			
R63	1000Ω				R109	68K			
R64	820K			* 470K	R110	27K 1W			
R65	33K 1W				R111	33K 2W			
R66	100K ♦			♦* 220K	R112	100K			
R67	560K				R113	10meg			
R68	2700Ω				R114	100Ω			
R69	1200Ω				R115	47Ω			
R70	22K				R116	100K 1W			♦
R71	39K				R117	150K 1W			♦
R72	470K				R118	16K 7W	PW10 16000Ω	7G 16000Ω	#106365
R73	47K				R119	1meg 2W			

SET 517 FOLDER 2

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN PART No.	REMARKS
R120	2.5Ω			
R121	22meg 2W			
R122	22meg 2W			
R123	22meg 2W			
R124	68K			
R125	1.5meg 1W			
R126	1.5meg 1W			†Matched Pair
R127	10K			
R128	270Ω			
R129	270Ω			
R130	1.8Ω			#109454
R131	4700Ω 2W			
R132	10meg			
R133	15K			
R134	47K			
R135	3.3meg			
R136	15K			
R137	330K			
R138	470Ω			
R139	390Ω			
R140	330Ω			
R141	100K			
R142	47K			
R143	1000Ω			
R144	15K			
R145	5 meg			
R146	470K			
R147	470K			†Matched Pair
R148	1 meg			
R149	220Ω			
R150	33K 1W			
R151	1500Ω			
R152	68K 1W			
R153	680Ω			
R154	47K			
R155	47K			
R156	4300Ω			
R157	47K 1W			
R158	39Ω 1W			
R159	430Ω 1W			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN PART No.	REMARKS
R160	39000Ω 1W			
R161	39000Ω 1W			†Matched Pair
R162	1meg			
R163	15K 2W			
R164	120K			
R165	470K			
R166	1meg			
R167	15K 2W			
R168	120K			
R169	470K			
R170	560Ω 5W			
R171	100K 2W	PWS 560Ω	5G 560Ω	#109454
R172	2200Ω			
R173	1meg			
R174	47K			
R175	15K 2W			
R176	150K			
R177	470K			
R178	100Ω 1W			
R179	100Ω 1W			
R180	100Ω 1W			
R181	82Ω 1W			
R182	12K 4W	PWS 1200Ω	3W SQ 1200Ω	
R183	5600Ω 5W	PWS 5600Ω	5G 5600Ω	#105232
R184	27K 4W	PWS 27000Ω	4G 27000Ω	#105227
R185	2700Ω			
R186	100K 2W			
R187	100K 2W			
R188	100K 2W			
R189	56K			
R190	3300Ω 7W	PW10 3300Ω	7G 3300Ω	#109471
R191	22K			
R192	1800Ω 10W	PW10 1800Ω	10W SQ 1800Ω	#94124
R193	1800Ω 10W	PW10 1800Ω	10W SQ 1800Ω	#94124
R194	33K 1W			
R195	33K 1W			
R196	750Ω (Cold)			#107291
R197	820K			
R198	4700Ω			
R199	47Ω			

* Alternate Value. + May not be used in some versions. # RCA Victor Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	1st Video IF	109252				① Wound on 1meg Resistor
L2	47.25MC Trap	109255				② Wound on 1800Ω Resistor
L3	2nd Video IF	109253				③ Wound on 39K Resistor
L4	3rd Video IF	109254				
L5A	4th Video IF	105294				
B	41.25MC Trap					
L6	RF Choke (13sh)	106306		BC-566	4623	RTC-8532
L7	4.5MC Trap	105295				
L8	Peaking (13sh)	102301 ①		TV-193 *	6110 *	RTC-8573 *
L9	RF Choke (1.5sh)	79498		BC-563	4604	RTC-8516
L10	Peaking (190sh)	104304		TV-184	6180	RTC-8597
L11	Peaking (180sh)	103295 ③		TV-184 a	6180 a	RTC-8597 a
L12	Peaking (180sh)	104304		TV-184	6180	RTC-8597
L13	Peaking (180sh)	79133 ③		TV-183	6179	RTC-8596
L14	Peaking (350sh)	101387		TV-185	6181	RTC-8598
L15	Peaking (180sh)	102363		TV-184	6180	RTC-8597
L16	RF Choke (13sh)	100441		BC-566	4623	RTC-8532
L17	RF Choke (1.5sh)	102365		BC-563	4604	RTC-8516
L18	RF Choke (1.5sh)	102349		BC-563	4604	RTC-8516
L19	1st Sound IF	109261				
L20	2nd Sound IF	109262				
L21	Quadrature	106383				
L22	Chroma Takeoff	107290				
L23	Bandpass Trans.	105213				
L24	Burst Phase Detector Trans.	106164			6033	
L25	Reactance Tube Plate	105216				
L26	1.53MC Osc.	107237				
L27	RF Choke (1.1sh)	107286		BC-561	4603	RTC-8515
L28	Peaking (630sh)	109257		TV-205		
L29	Peaking (630sh)	109257		TV-205	6146	RTC-8562
L30	RF Choke (13sh)	100441		BC-566	4623	RTC-8532
L31	RF Choke (1sh)	100441		BC-566	4623	RTC-8532

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L32	Horiz. Osc.	109281						
L33	Horiz. Waveform	109327		TV-186 ①	6314	QRC109	RTC-8528	HS-8	WLC-8
L34	Horiz. Linearity Coil 28MH-34MH	105196						
L35	Right Horiz. Red/Grn #1 3.5MH-7.5MH	105065						
L36	Right Horiz. Red/Grn #2 2.5MH-4.5MH	105066						
L37	Right Horiz. Blue #1 Pri. 3.6MH-9.4MH Sec. 09MH-15MH	109180						
L38	Green Coil *	109164						
L39	Blue Coil *	109164						
L40	Red Coil *	109164						
L41	Focus Coil	109264						

① Use original clip and slug. * Part of Convergence Yoke Assembly.

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT 1000 (%)	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L42	.420A	20Ω	.7 Hy.	108196		C-3238 ①			① Drill new mounting hole(s).

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V @ 3A 2 AC	150V @ 1.5A	6.3V @ 2A	109286					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 12.5A								

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	Vert. Output	109263						
T3	Vert. Osc. (12MH) Vert. (33MH)	109457						
T4	Horiz. Output	109231						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	7500Ω	5-4Ω	10037	A-3020	A-3349	26B46	S-9Z	

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA RCA Victor PART No.	QUAM PART No.	NOTES
SP1	8"	PM	3-4Ω	107475 ①	8A2I	① Used in Models 21CDR976, 21CDR930-4 & U, 21CDR933-5-6 & U, 21CD920-4 & U
SP2	3½"	PM	8-10Ω	102119	3A15T29	
SP3	3½"	PM	8-10Ω	102119	3A15T29	② Used in Models 21CDR823 & U, 21CD835-6-7 & U, 21CDR835-6-7 & U
	4" x 6"	PM	3-4Ω	107477 ②		
	6" x 9"	PM	3-4Ω	107304 ③		③ Used in Models 21CD865-6-7 & U, 21CDR885 & U, 21CD904 & U, 21CD926 & U, 21CDR896 & U, 21CD666-6-7 & U, 21CDR904, 21CD835 & U, 21CD856 & U, 21CDR856 & U, 21CD857 & U
	4"	PM	3-4Ω	107474 ④		④ Used in Models 21CD812 & U

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA RCA Victor PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.420A	106379 *		F-6 *		* Silicon Type
M2	.420A	106379 *		F-6 *		† Selenium Type
M3		105064 †				

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA RCA Victor PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	BUSS PART No. FUSE	HOLDER
M4	C	3½A 250V	106357	109238	33303.5 (C 3½A 250V)	346007	C 3½	HC 3½ to 3½
M5	3AG	3/4A 250V	34527	106356	313.750 (3AG 3/4A 250V)	357001	AGC 3/4	4406
M6	3" length of #26 wire							

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA RCA Victor PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M7			6GC1 *			*Dual Selenium Diode, Common Cathode Type
M8	1N64	76675B †		1N64	1N64	†Crystal Diode, Sound Detector (Pigtail)
M9	1N64	76675B †		1N64	1N64	†Crystal Diode, Video Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M10	Tuner	109342	(KRK97M) VHF with UHF Provisions, Chassis CTC10F
M11	Tuner	109499	(KRK98AB) UHF, Chassis CTC10F (Less Gears)
	Tuner	109333	(KRK98F) VHF, Chassis CTC10A
	Tuner	109334	(KRK98T) VHF, Chassis CTC10C
	Tuner	109335	(KRK98H) VHF, Chassis CTC10E
	Tuner	109340	(KRK97H) VHF with UHF Provisions, Chassis CTC10B

MISCELLANEOUS (cont)

ITEM No.	PART NAME	PART No.	NOTES
	Tuner	109341	(KRK97F) VHF with UHF Provisions, Chassis CTC10D
	Tuner	109499	(KRK98AA) UHF, Chassis CTC10D, D (Less Gears)
	Tuner		(KRK98T) VHF, Chassis CTC10T
	Tuner		(KRK97C) VHF with UHF Provisions, Chassis CTC10U
	Tuner		(KRK98AA) UHF, Chassis CTC10U
	Tuner		(KRK98C) VHF, Chassis CTC10W
M12	Crystal	105330	3.58MC
M13	Delay Line	105253	
M14	Switch	49750	Kine (Temp. Set-up), (DPDT Slide Type)
M15	Magnet	103178	Lateral Assembly
M16	Magnet	105024	Convergence (3 used)
M17	Purity Ring	79604	
	Printed Board	109234	Video IF, Less Tubes
	Printed Board	109223	Sound, Less Tubes
	Printed Board	109236	Picture, Less Tubes
	Printed Board	109235	Syncrogate, Less Tubes
	Printed Board	109185	Convergence, Less Tubes
M18	Switch	107834	Station Stopper
M19	Switch	109479	Touch Bar
M20	Solenoid	107850	Control Clutch Drive
M21	Solenoid	107850	Control Clutch Drive
M22	Solenoid	107850	Control Clutch Drive
M23	Solenoid	107850	Control Clutch Drive
M24	Motor	107860	Channel Selector, Reversible Drive
	Gear	109304	Control Drive (Brass) Nylon
	Gear	107931	Motor Drive (Brass)
	Gear	106869	Motor Drive (Steel)
	Gear	106893	Off-On Volume, Color or Tint, Channel Selector Drive Shaft (Nylon)
	Gear	107553	Off-On Volume, Color or Tint, Control Drive (Nylon)
	Gear	107568	Tuner Drive and Control Drive Idler (Brass)

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 9738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-In	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8494 (Round) - 4 Conductor 8465 (Round) - 6 Conductor 8468 (Round) - 8 Conductor

REMOTE CONTROL RECEIVER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	* GENERAL ELECTRIC * USE	TYPE	ITEM No.	* RAYTHEON * SYLVANIA * USE	TYPE
V25	1st-2nd 40KC Amp.	12AX7	V29	Oa-Vol. Relay Control Amp.- Channel Sel. Relay Control Amp.	6EV7
V26	3rd-4th 40KC Amp.	12AX7			
V27	40KC Driver - Motor Rev. Rect. - Volume Rect.	6BN8	V30	Motor Rev. - Off Amp.- Motor Rev. - Off Relay Control Amp.	6EV7
V28	Tint Relay Control Amp.- Color Relay Control Amp.	6EV7			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	REPLACEMENT DATA RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C146A	40	200	109284					TVL-2812	
B	5	25						TVA-1315	
C	500	50							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CORNELL-DUBILIER PART No.	CENTRALAB PART No.	ERIE/ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.
C149	.1 200V		P388N-1	DF-104	CUB2P1	8DP-3-104	GEM-201	2TM-P10
C150	330		DD-330	DD-331	UTJ33	CCD-331	B-333	10TS-T33
C151	120		DD-121	DD-121	UJT12	CCD-121	GP312	10TS-T12
C152	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C153	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C154	120		DD-120	DD-121	UJT12	CCD-121	GP312	10TS-T12
C155	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C156	120		DD-120	DD-121	UJT12	CCD-121	GP312	10TS-T12
C157	.1 300V		P388N-1	DF-104	CUB2P1	8DP-3-104	GEM-201	2TM-P10
C158	120		DD-120	DD-121	UJT12	CCD-121	GP312	10TS-T12
C159	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C160	.1 200V		P388N-1	DF-104	CUB2P1	8DP-3-104	GEM-201	2TM-P10
C161	180 NPO			TCS-180	CUT18U		CWT-318	10TC-U-T18
C162	.1 200V		P388N-1	DF-104	CUB2P1	8DP-3-104	GEM-201	2TM-P10
C163	680 10%		1469-00068		SR2T68	CM-1H8-681K	MCJ249	M3-368
C164	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C165	.047 200V		P388N-047	DD-503	CUB2M47	4DP-3-473	GEM-4147	2TM-S47
C166	680 10%		1469-00068		SR2T68	CM-1H8-681K	MCJ249	M3-368
C167	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C168	.047 200V		P388N-047	DD-503	CUB2M47	4DP-3-473	GEM-4147	2TM-S47
C169	680 10%		1469-00068		SR2T68	CM-1H8-681K	MCJ249	M3-368
C170	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10
C171	.047 200V		P388N-047	DD-503	CUB2M47	4DP-3-473	GEM-4147	2TM-S47
C172	680 10%		1469-00068		SR2T68	CM-1H8-681K	MCJ249	M3-368
C173	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5EK-S10

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, U, W, CRK3F, CTP7B

FOLDER 2

REMOTE CONTROL RECEIVER
PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C174	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C175	.0082 400V 10%		P684CM-0082		DPMS8D82	6DP-2-822	GEM-16282	6PS-D82
C176	.0047 600V 10%		V84C6D47-10%		PM6D47	6DP-1-472	GEM-16247	6TM-D47
C177	.22 400V	(.1) †	P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C178	10000		BPD-01	DD-103	BYA10SI	CCD-103	B-110	5HK-S10

† Alternate Value.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R200	100K			
R201	100K			
R202	100K			
R203	100K			
R204	150K			
R205	100K			
R206	100K			
R207	47K			
R208	100K			
R209	10meg			
R210	47K			
R211	100K			
R212	470K			
R213	2.7meg			
R214	100K			
R215	68K			
R216	1000Ω			
R217	1meg			
R218	1meg			
R219	2.2meg			

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R220	1meg			
R221	2.2meg			
R222	1meg			
R223	2.2meg			
R224	1meg			
R225	2.2meg			
R226	1meg			
R227	2.2meg			
R228	1meg			
R229	15K 1W			
R230	15K 2W			
R231	2.2Ω 4W		5W SQ 2.2Ω	#109143
R232	15K			
R233	1000Ω			
R234	470Ω 1W			
R235	2700Ω			
R236	12K 3W	PW5 12000Ω	3G 12000Ω	#105225
R237	6800Ω 5W	PW5 6800Ω	5G 6800Ω	#107541
R238	4.7Ω 4W	PW5 4.7Ω	5W SQ 4.7Ω	#106871
R239	7.5Ω			#107836

RCA Victor Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L43	40KC Trans.	107575				
L44	Tint Rect.	107539				
L45	Color Rect.	107539				
L46	Volume Rect.	107538				
L47	Channel Rect.	107538				

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T6	117V @ .65A	120V @ .050A DC	24V @ 1A Tap @ 6.3V @ 3.1A	107533					

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	RCA Victor PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M25	.050A	*	1N1763 *	40H *	SR500 *	* Silicon
M26	.260A	107540 ♦				♦ Selenium

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RCA Victor PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M27	1 1/4" length #26 Wire							

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M28		106952 *				* Selenium Diode, Channel Rectifier
M29		106952 ♦				♦ Selenium Diode, Color Rectifier
M30		106952 †				† Selenium Diode, Tint Rectifier

REMOTE CONTROL RECEIVER PARTS LIST (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M31	Relay	107537	Channel Selector
M32	Relay	107536	Volume Control
M33	Relay	107536	Color Control
M34	Relay	107536	Tint Control
M35	Relay	107405	Motor Reversing
M36	Relay	107535	Motor Start
	Microphone	107630	Cabinet Remote, Control, Models 211CDR835, 6, 7, & U, 211CDR896, U, 211CDR932, 5, 6, & U, 211CHR976
	Microphone	107850	Cabinet Remote Control, Models 211CDR920, 4, U, 211CDR886, U, 211CDR904, U

REMOTE CONTROL TRANSMITTER PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N406	Oscillator	2N406	2N633	2N406	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C179	50	3		PTT-3050	NLW50-3	TT6X50	MLV50-3	TE-1058	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C180	220 2%		1469-00022		22R5T22-2%	CM-15-E-221G		
C181	.22 50V		P123ZNN-22		WMF1P22E	1DP-3-224	GEM-2022	2WF-P22
C182	6-21	#107639						
C183	39 2%		1469-000039-2%	TCZ-39	22R5Q39-2%	CM-15-E-390G	MCE233	
C184	180 2%		1469-000180-2%		22R5T18-2%	CM-15-E-181G		
C185	240 2%		1469-00024-2%		22R5T24-2%	CM-15-E-241G		
C186	8-40 N750							
C187	100 2%		1469-0001-2%	TCZ-100	22R5T1-2%	CM-15-E-101G	MCE235	
C188	6-21	#107639						

RCA Victor Part Number.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		IRC PART No.	WORKMAN TV PART No.	
R240	2200Ω			
R241	750Ω			
R242	220Ω			
R243	180Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L48	Oscillator	107568				

BATTERIES

ITEM No.	VOLTAGE	RCA Victor PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M37	4.2	VS163				E-163		TR-163R	

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M38	Microphone	107437	Transmitter
	Printed Board	107569	Circuit Assembly, Less Buttons

CABINETS & CABINET PARTS

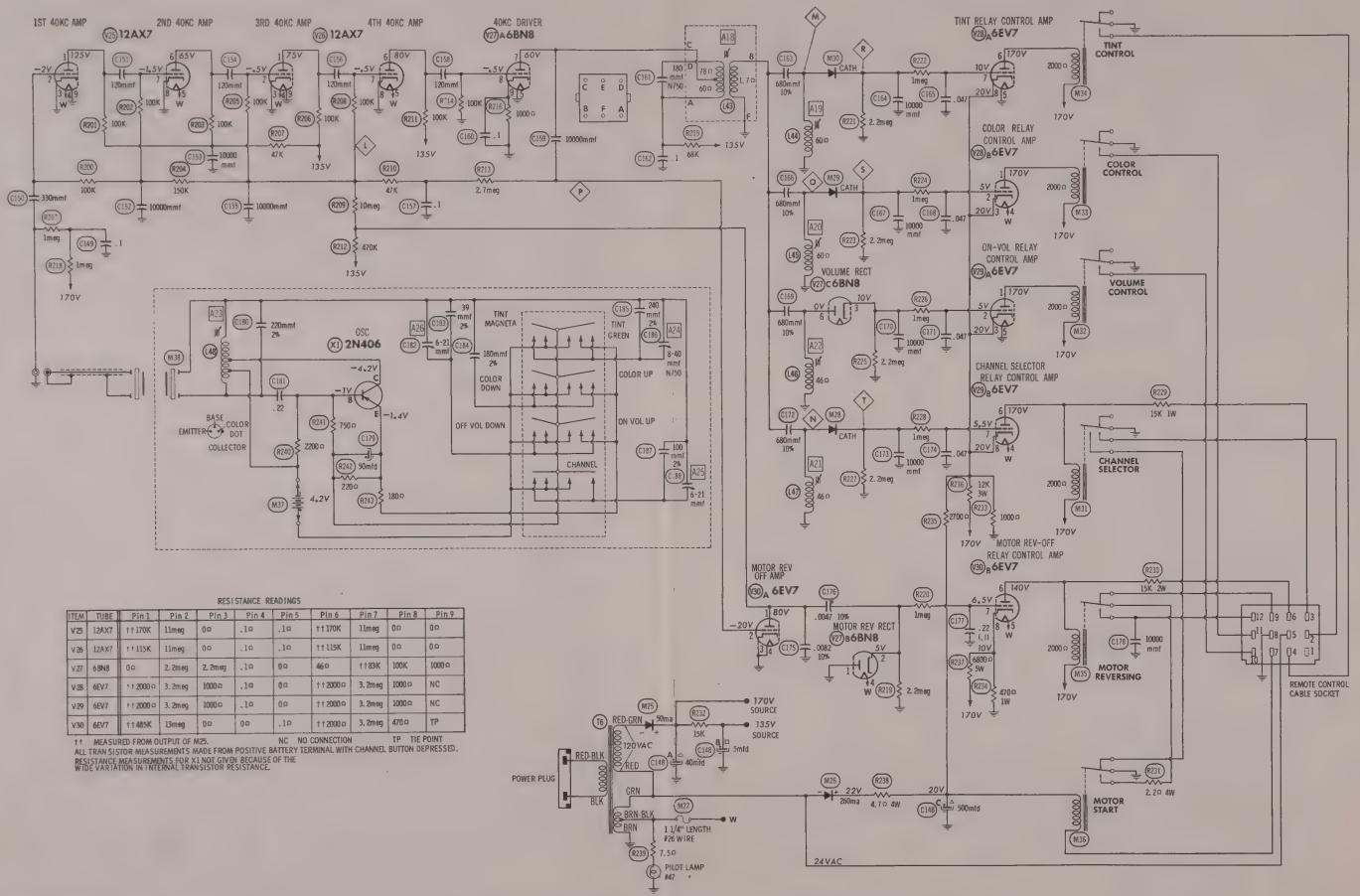
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Cabinet	107566	Bottom
Cabinet	107567	Top

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

		211CB812, U	211CB822, U	211CD835, U, X	211CD836, U, X	211CD837, U, X	211CD855, U	211CD856, U	211CD857, U	211CD865, U	211CD866, U	211CD867, U	211CD885, U	211CD886, U	211CD887, U	211CD896, U	211CD904, U	211CD923, U	211CD924, U	211CDR835, U	211CDR836, U	211CDR837, U	211CDR886, U	211CDR896, U	211CDR904, U	211CDR920, U	211CDR924, U	211CDR932, U	211CDR935, U	211CDR936, U	211CHR976
Safety Glass	106781	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mask	106459	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Channel Selector Touch Bar	109153																X			X	X	X	X	X	X	X	X	X	X	X
Dial, Channel Indicator	109478																			X	X	X	X	X	X	X	X	X	X	X
Knob, VHF/UHF Chan. Sel.	109398	X																												
Knob, UHF Chan. Selector	107269	X	X				X	X	X																					
Knob, UHF Chan. Indicator	107266	X	X				X	X	X																					
Knob, VHF, VHF/UHF Chan. Sel.	109271			X	X	X				X	X	X																		
Knob, VHF/UHF Chan. Sel.	109446												X	X	X															
Knob, UHF Channel Selector	109275			X	X	X				X	X	X								X	X	X								
Knob, UHF Channel Selector	109447												X	X	X	X		X	X				X	X		X	X	X	X	
Knob, UHF Channel Indicator	109276			X	X	X				X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
Knob, VHF Channel Selector	109192		X				X	X	X																					
Knob, VHF, VHF/UHF Chan. Sel.	109711																	X	X											
Knob, Fine Tuning	109448												X	X	X	X	X	X	X											
Knob, Fine Tuning	109189			X	X	X				X	X	X								X	X	X		X	X	X	X	X	X	X
Knob, Fine Tuning	106596	X	X				X	X	X																					
Knob, Vol., Brightness	106278	X	X				X	X	X																					
Knob, Vol., Brightness	109273			X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob, Contrast, Tone, Vert. H, Horiz. H.	107605	X	X				X	X	X																					
Knob, Contrast, Tone, Vert. H, Horiz. H.	109571																	X	X											X
Knob, Contrast, Tone, Vert. H, Horiz. H.	109274			X	X	X				X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	
Knob, Focus	109246		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	
Knob, Tint	109451												X	X	X	X	X	X	X				X		X	X	X	X	X	X
Knob, Tint,	109272			X	X	X				X	X	X								X	X	X								
Knob, Tint, Color	107603	X	X				X	X	X																					
Knob, Color	109449			X	X	X				X	X	X																		
Knob, Color	109450												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cabinet, Black	Z4815	X																												
Cabinet, Black	Z4729		X																											
Cabinet, Mahogany	Z4736			X																										
Cabinet, Walnut	Z4737				X																									
Cabinet, Oak	Z4738					X																								
Cabinet, Mahogany	Z4739																			X										
Cabinet, Walnut	Z4740																				X									
Cabinet, Oak	Z4741																					X								
Cabinet, Mahogany	X4789												X																	
Cabinet, Walnut	X4790													X																
Cabinet, Oak	X4791														X															
Cabinet, Walnut	X4792																						X							
Cabinet, Cherry	X4783																	X						X						
Cabinet, Maple	X4784																		X						X					
Cabinet, Ebony	X4782																									X				
Cabinet, Mahogany	X4780																										X			
Cabinet, Walnut	X4781																											X		
Cabinet, Mahogany	M4822						X																							
Cabinet, Walnut	M4823							X																						
Cabinet, Oak	M4824								X																					
Leg, Mahogany	X5206												X																	
Leg, Brass (Not "X" Models)	X5129			X	X	X														X	X	X								
Leg, Walnut	X5207													X									X							
Leg, Oak	X5208														X															



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V25	12AX7	††170K	11meg	0Ω	.1Ω	.1Ω	††115K	11meg	0Ω	0Ω
V26	12AX7	††115K	11meg	0Ω	.1Ω	.1Ω	††115K	11meg	0Ω	0Ω
V27	6BN8	0Ω	2.2meg	2.2meg	.1Ω	0Ω	46Ω	††83K	100K	1000Ω
V28	6EV7	††2000Ω	3.2meg	1000Ω	.1Ω	0Ω	††2000Ω	3.2meg	1000Ω	NC
V29	6EV7	††2000Ω	3.2meg	1000Ω	.1Ω	0Ω	††2000Ω	3.2meg	1000Ω	NC
V30	6EV7	††485K	13meg	0Ω	0Ω	.1Ω	††2000Ω	3.2meg	470Ω	TP

†† MEASURED FROM OUTPUT OF M25. NC NO CONNECTION TP TIE POINT
ALL TRANSISTOR MEASUREMENTS MADE FROM POSITIVE BATTERY TERMINAL WITH CHANNEL BUTTON DEPRESSED.
RESISTANCE MEASUREMENTS FOR X1 NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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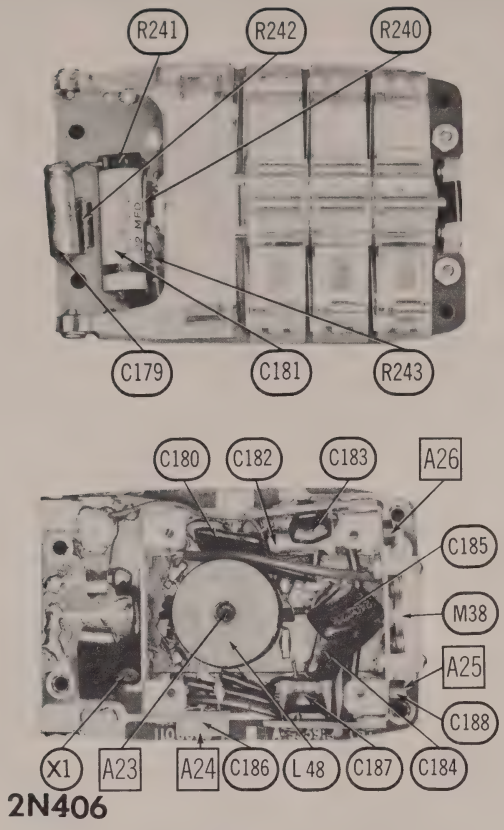
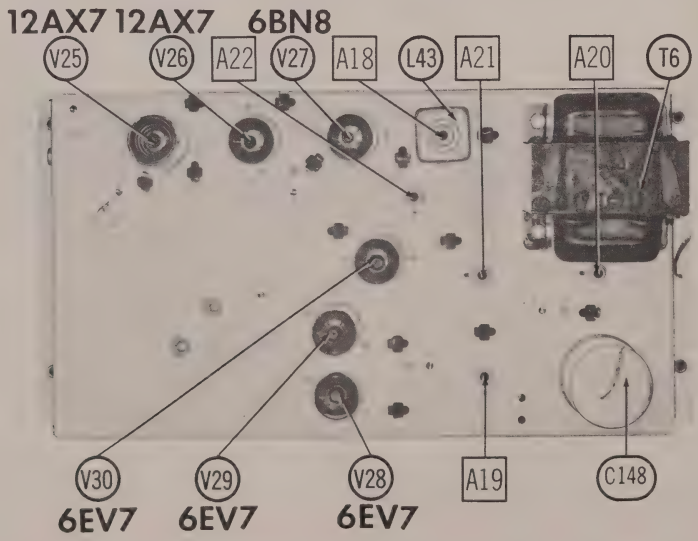
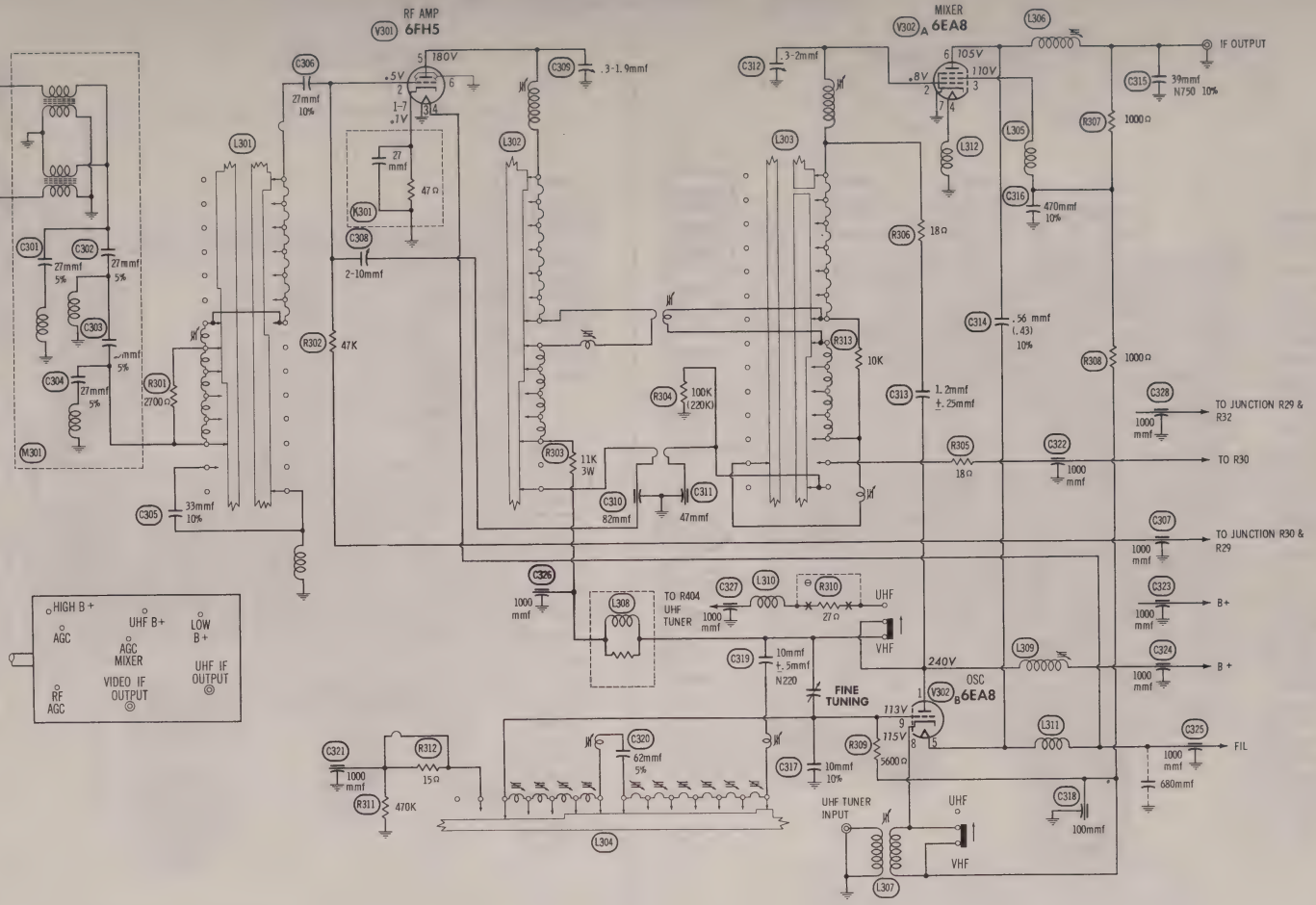
REMOTE CONTROL RECEIVER & TRANSMITTER



REMOTE CONTROL TRANSMITTER



REMOTE CONTROL RECEIVER - TOP VIEW



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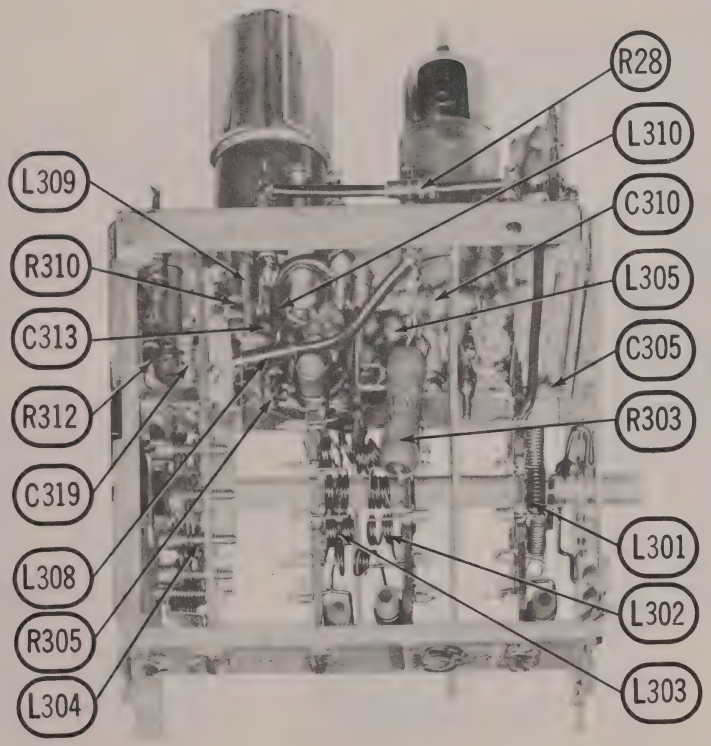
VHF TUNER with UHF Provisions - KRK97E, F, H

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B



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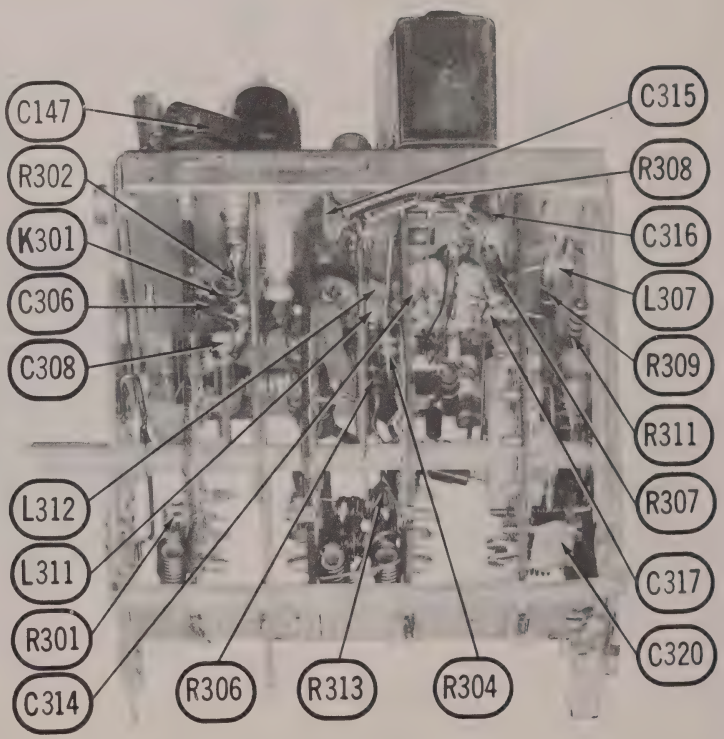

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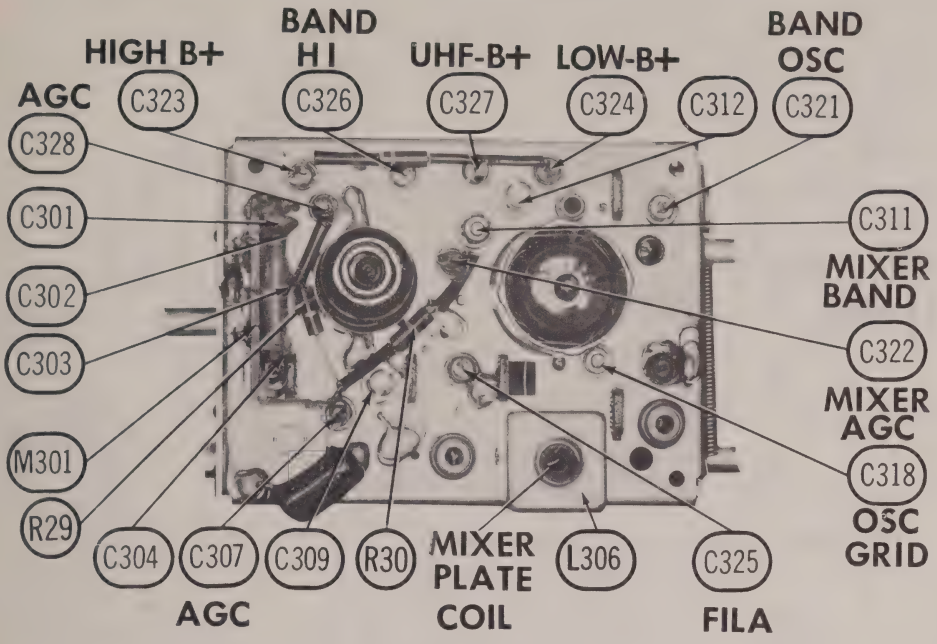
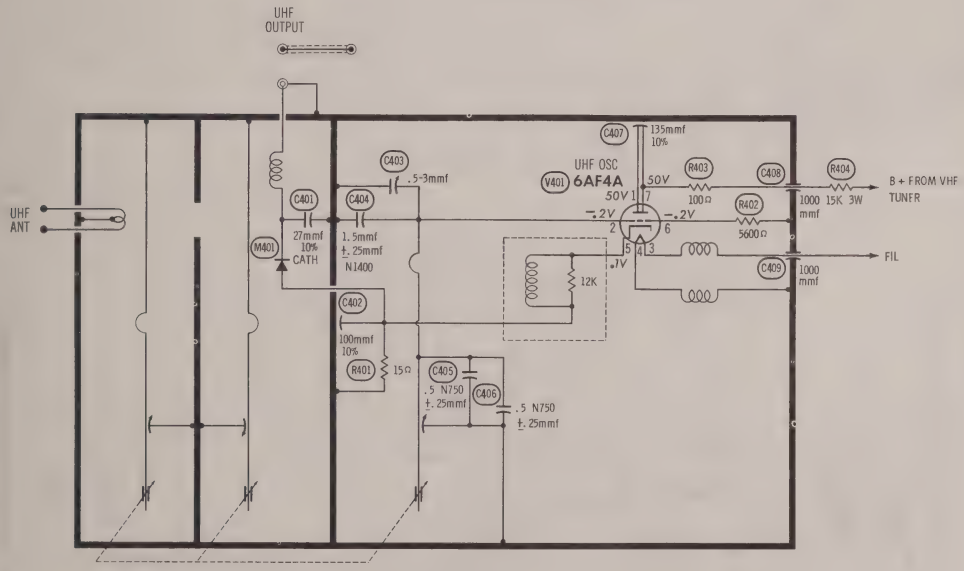
VHF TUNER with UHF Provisions - KRK97H



VHF TUNER with UHF Provisions - KRK97H - TOP VIEW



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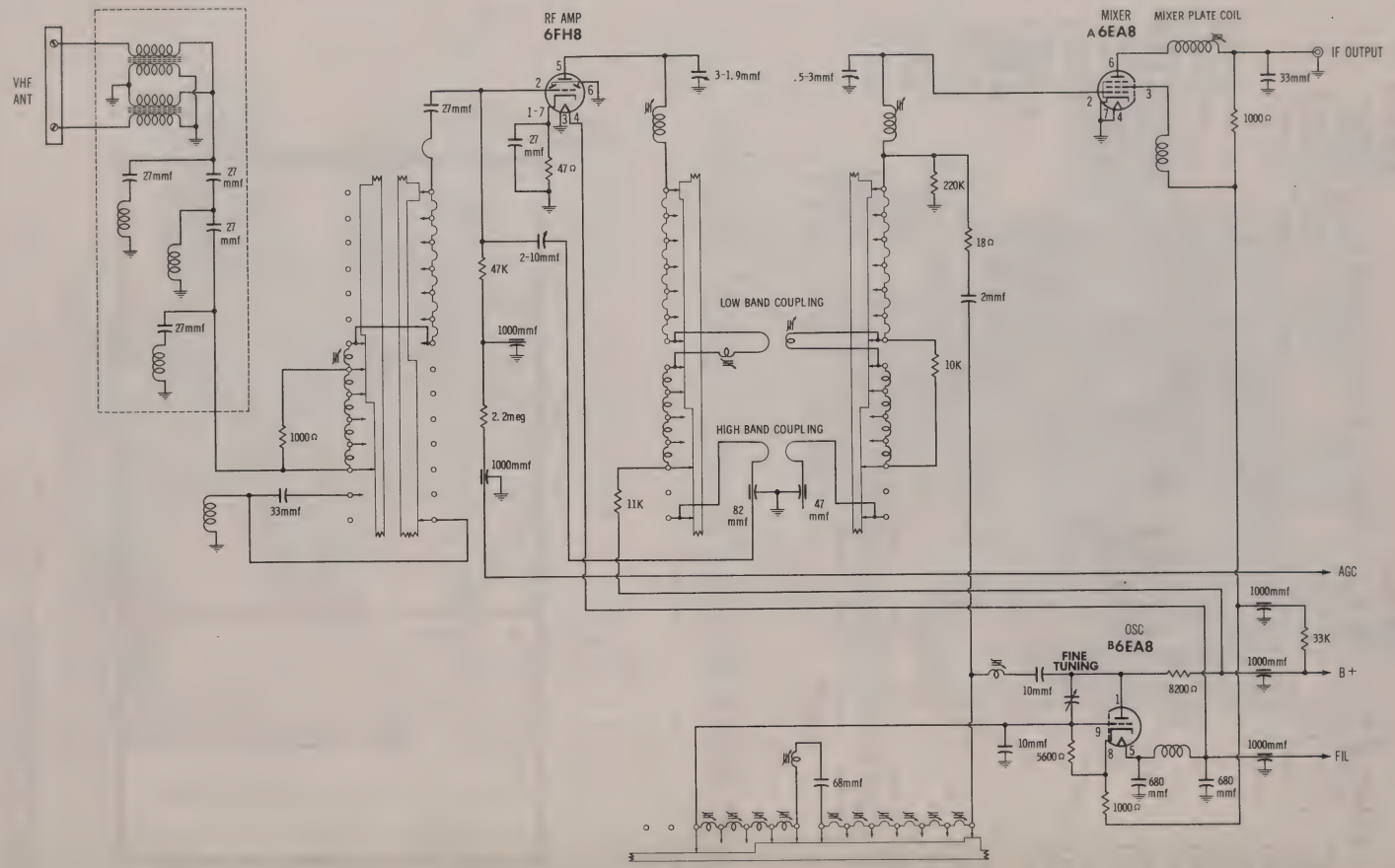
UHF TUNER KRK66AA, AB

SET 517 FOLDER 2



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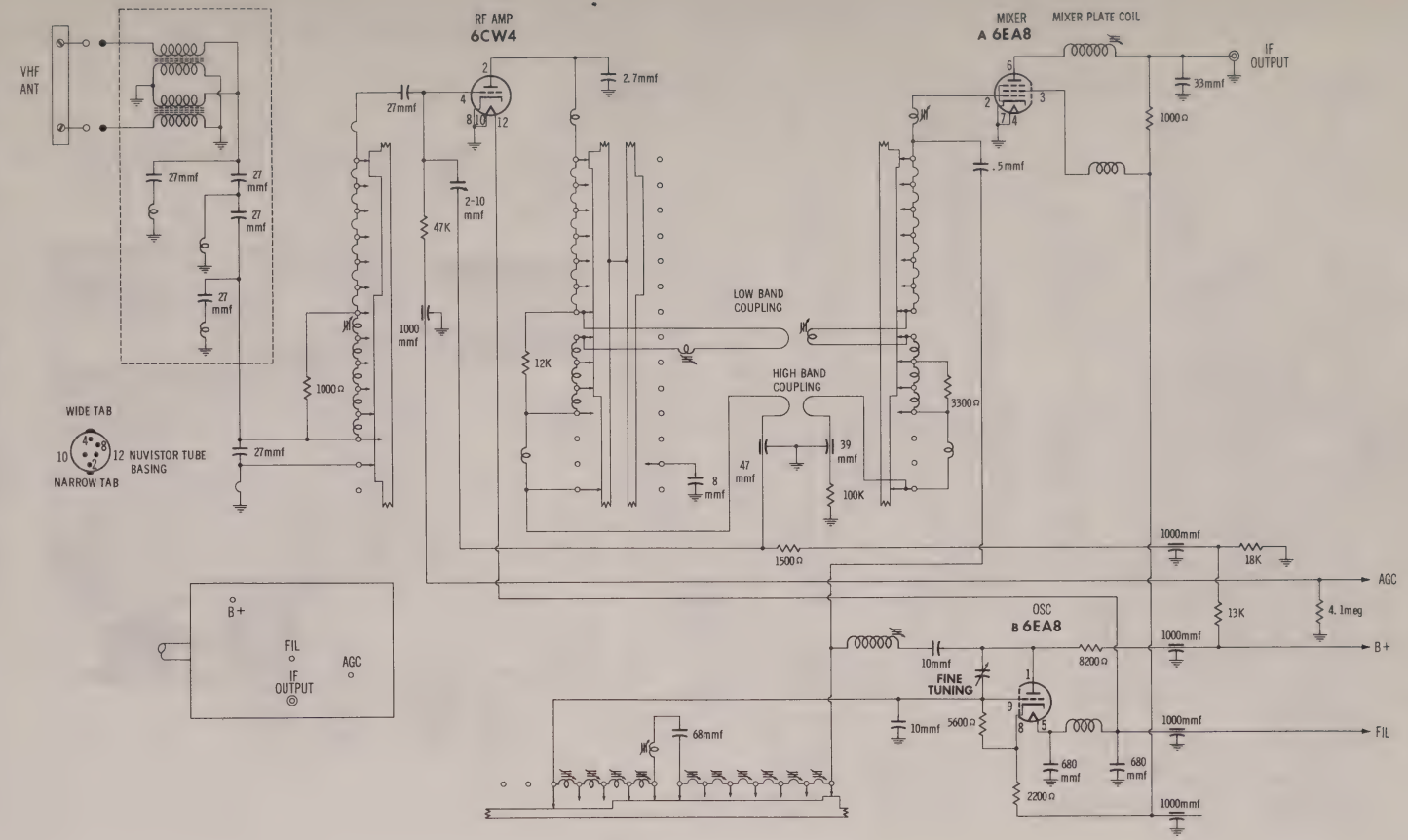
VHF TUNER KRK96E, F, H



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VHF TUNER KRK98C

RCA VICTOR CHASSIS CTC10A, B, C, D, E, F, T, TU, W, CRK3F, CTP7B

UHF TUNER PARTS LIST AND DESCRIPTIONS

KRK–66AA,AB

TUBES

	• GENERAL ELECTRIC •		RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V401	UHF Osc.	6AF4A			

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C401	27 10%		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C402	100 10%							
C403	.5-3			829-3		CV-1	CT565	
C404	1.5 N1400 ±.25mmf	#106691						
C405	.5 N750 ±.25mmf	#104917						
C406	.5 N750 ±.25mmf	#104917						
C407	135 10%		1469-00013	TCZ-130	22R5T13	CM-19B-131K		MS-313
C408	1000		EF-001	MFT-1000		CCF-102	CT280A	
C409	1000		EF-001	MFT-1000		CCF-102	CT280A	

RCA Victor Part Number.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

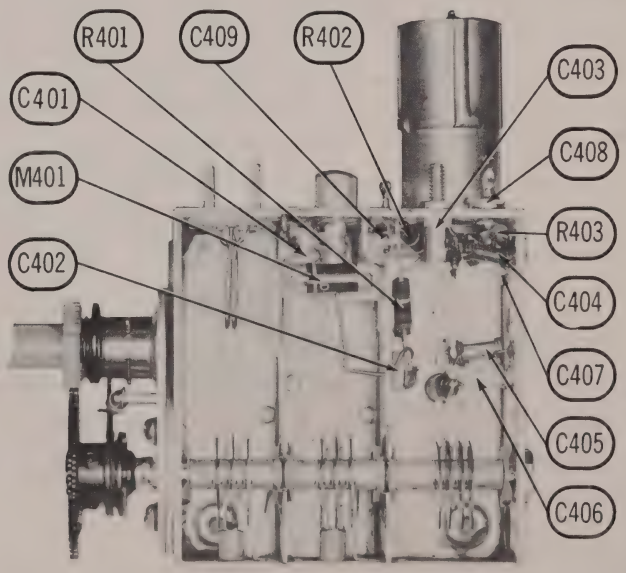
ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R401	15Ω				R403	100Ω			
R402	5600Ω				R404	15K 3W	PW5 15000Ω	3G 15000Ω	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M401	LD-128	107729				

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
	Gear	106494	Tuner Drive Assembly (Complete)
	Shaft	107176	Main Drive Shaft Assembly Complete (KRK66AA, AB)



UHF TUNER KRK–66AB

VHF TUNER PARTS LIST AND DESCRIPTIONS

KRK–97E,F,H

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆				
V301	RF Amp.	6FH5	V302	Mixer - Osc.	6EA8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	27	5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C302	27	5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C303	27	5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C304	27	5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C305	33	10%		DI-33	DD-33	L10Q33	CCD-330	GP433	10TS-Q33
C306	27	10%		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C307	1000			EF-001	MFT-1000		CCF-102	CT280A	
C308	2-10		#109377		829-10				
C309	.3-1.9		#105507						
C310	82		#109351						
C311	47		#109352						
C312	.3-2		#105507						
C313	1.2	±.25mmf			TCZ-1			CNO-510	10TCC-V12
C314	.56	10%	† (.43)						
C315	39 N750	10%			TCN-39	C10Q39U	CCTN-390	CN7-439	10TCC-Q39
C316	470	10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-Q10
C317	10	10%		DI-10	DD-100	L10Q1	CCD-100	GP410	
C318	100			EF-0001	MFT-100				
C319	10 N220	±.5mmf	#76350				*		10TCR-Q10
C320	62	5%			TCZ-62	C10Q62C			
C321	1000			EF-001	MFT-1000		CCF-102	CT280A	
C322	1000			EF-001	MFT-1000		CCF-102	CT280A	
C323	1000			EF-001	MFT-1000		CCF-102	CT280A	
C324	1000			EF-001	MFT-1000		CCF-102	CT280A	
C325	1000			EF-001	MFT-1000		CCF-102	CT280A	
C326	1000			EF-001	MFT-1000		CCF-102	CT280A	
C327	1000			EF-001	MFT-1000		CCF-102	CT280A	
C328	1000			EF-001	MFT-1000		CCF-102	CT280A	

RCA Victor Part Number. † Alternate Value.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R301	2700Ω				R308	1000Ω			
R302	47K				R309	5600Ω			
R303	11K 3W	PW5 11000Ω	3G 11000Ω	#109353	R310	27Ω ①			
R304	100K			* 220K	R311	470K			
R305	18Ω				R312	15Ω			
R306	18Ω				R313	10K			
R307	1000Ω								

RCA Victor Part Number. * Alternate Value
① May not be used in some versions.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K301	RF Amp. Cathode	27mmf, 47Ω	109372	

COILS (RF-IF)

ITEM No.	USE	RCA Victor PART No.	NOTES	ITEM No.	USE	RCA Victor PART No.	NOTES
L301	Ant. Coils	109363	Channels 2 - 13 Includes Wafer Assembly	L306	Mixer Plate	109375	
				L307	UHF IF Input	103668	
				L308	RF Choke	107975	Wound on 2200Ω Res.
L302	RF Coils	109362	"	L309	Interstage	104437	
L303	Mixer Grid Coils	109360	"	L310	RF Choke		
L304	Osc. Coils	109370	"	L311	Fil. Choke		
L305	RF Choke			L312	Fil. Choke		

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M301	Antenna Matching Network	109364	Assembly
	Switch Assembly	109354	(KRK97H)
	Gear	107453	Fine Tuning Intermediate
	Gear	106261	Turret, Fine Tuning, Even Number Channels
	Gear	106262	Turret, Fine Tuning, Odd Number Channels
	Hub	109371	Channel Selector Programming (KRK97H)
	Hub	109358	Assembly (KRK97F)
	Shaft	107618	Detent (KRK97E, F)
	Shaft	109356	Detent (KRK97H)
	Shaft	106264	Fine Tuning (KRK97E, F)
	Shaft	108376	Fine Tuning (KRK97H)

REMOTE CONTROL ALIGNMENT INSTRUCTIONS

REMOTE CONTROL RECEIVER ALIGNMENT

Short points Ⓜ, Ⓝ Ⓞ and pin 6 (cathode) of V27 to chassis with clip leads.
Suggested Alignment Tools: GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CONNECT VTVM	ADJUST	REMARKS
1.	High side to microphone input. Low side to chassis.	40.75KC	DC probe thru 10meg to point Ⓟ. Common to chassis.	A18	Adjust for maximum deflection. Then turn ½ turn clockwise.
2.	"	35.75KC	DC probe thru 10meg to point Ⓡ. Common to chassis.	A19	Remove clip lead from points Ⓜ, Ⓝ, Ⓞ and pin 6 of V27. Adjust A19 for maximum deflection.
3.	"	38.25KC	DC probe thru 10meg to point Ⓢ. Common to chassis.	A20	Adjust for maximum deflection.
4.	"	40.75KC	DC probe thru 10meg to point Ⓣ. Common to chassis.	A21	"
5.	"	43.25KC	DC probe thru 10meg to pin 3 (Cath.) of V27. Common to chassis.	A22	"

REMOTE CONTROL TRANSMITTER ALIGNMENT

Remove the complete cover from the transmitter.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CONNECT SCOPE	ADJUST	REMARKS
6.	High side to horizontal input of scope. Low side to ground lug of scope.	19.125KC	Vert. Amp. probe about 1 inch in front of transducer opening at end of transmitter. Low side to negative terminal of battery.	A23	Depress right hand "Color" button and adjust A23 for zero beat on scope. Depress left hand "Color" button and check for blocking on scope pattern.
7.	"	17.875KC	"	A24	Depress right hand "Tint" button and adjust A24 for zero beat. Depress left hand "Tint" button and check for blocking.
8.	"	20.375KC	"	A25	Connect a clip lead across R243. Depress Channel button and adjust A25 for zero beat on scope. Remove jumper.
9.	"	21.625KC	"	A26	Depress right hand "On-Volume" button and adjust A26 for zero beat on scope. Depress left hand "Off-Volume" button and check for blocking.

VHF TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS (FOR MODELS WITH REMOTE CONTROL)

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

OSCILLATOR ALIGNMENT

Set the Fine Tuning to the center of its range. Channel 13 slug is located on top of the tuner in front of the Oscillator tube. Channel 12 thru 2 is located on the front of the tuner in a circle around the shaft. The adjustments should be in sequence from the highest to the lowest in the area. Reach thru the openings in the dial and rotate the insulator until the elongated opening in it coincides with the elongated opening in the dial. Proceed in a counterclockwise direction adjusting for best picture and sound.

RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

PRE-ALIGNMENT INSTRUCTIONS (FOR MODELS WITHOUT REMOTE CONTROL)

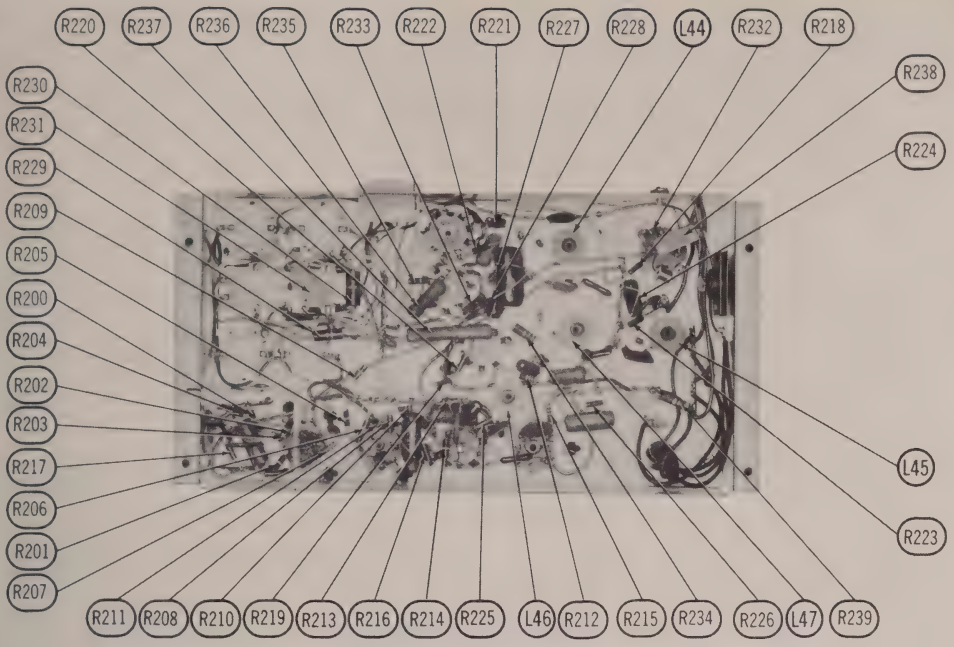
Suggested Alignement Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

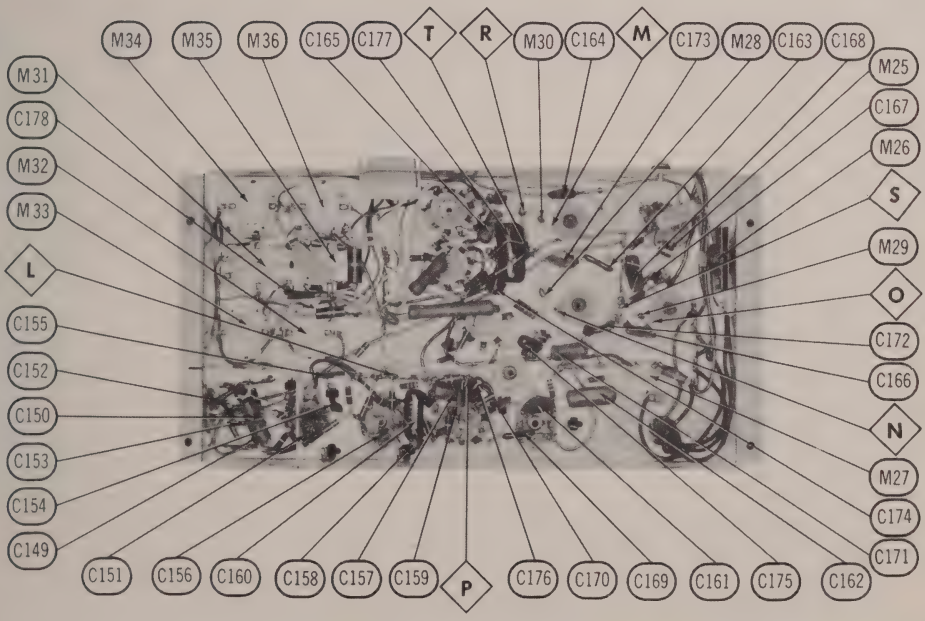
OSCILLATOR ALIGNMENT

Set the Fine Tunning to the center of its range. Channel 13 slug is located on top of the tuner in front of the Oscillator tube. Channel 12 thru 2 is located on the front of the tuner in a circle around the shaft. The adjustments should be in sequence from the highest to the lowest in the area. The proper slug for each channel will become accessible thru an opening in the front disc as the Channel Selector is rotated. Proceed in a counterclockwise direction adjusting for best picture and sound.

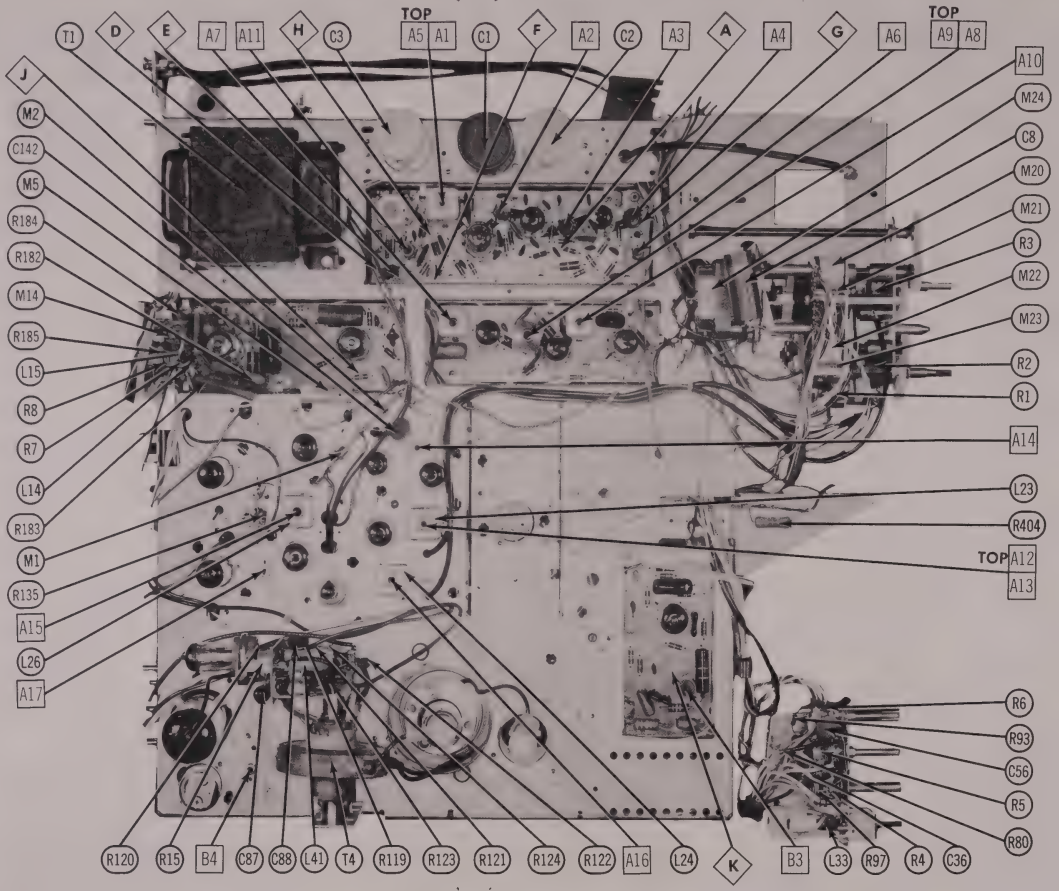
RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

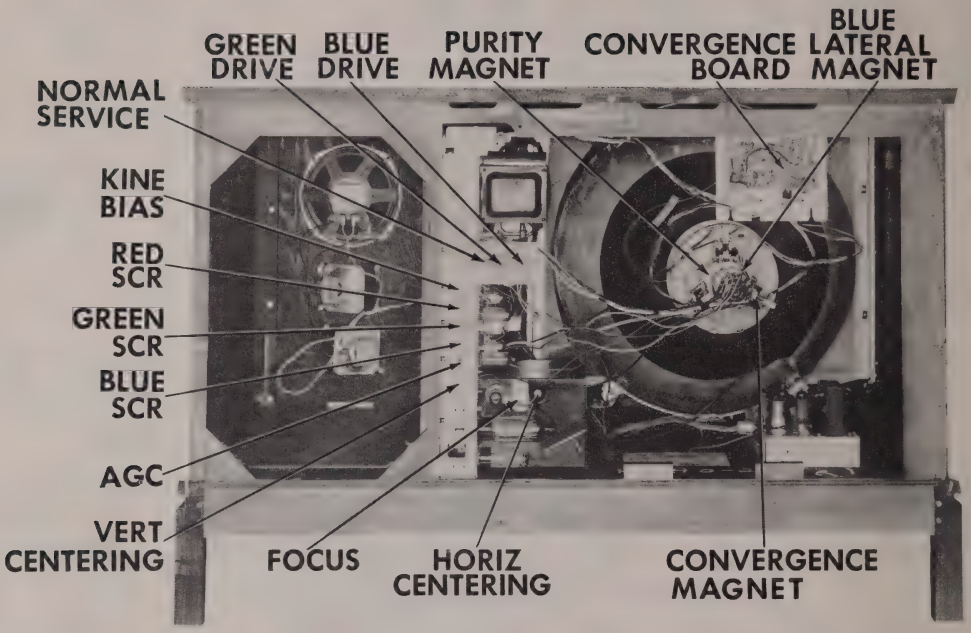




REMOTE CONTROL RECEIVER - BOTTOM VIEW



CHASSIS - TOP VIEW



CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 211CDR936U

1. Remove 10 push-on type knobs in front of cabinet.
2. Remove 8 screws holding rear cover.
3. Remove rear cover.
4. Remove picture tube socket, yoke wires, high voltage lead, convergence control panel plug, two plugs from remote control receiver, and speaker leads.
5. Remove 4 chassis bolts (2 at top and 2 at bottom).
6. Pull chassis out part way and remove 2 screws holding control panel.
7. Remove control panel and chassis.

PICTURE TUBE REMOVAL

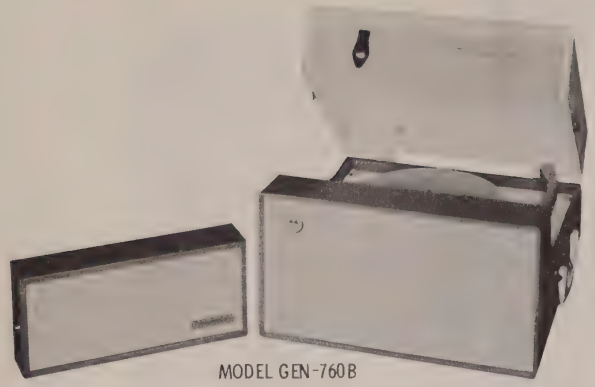
It is necessary to remove the chassis for picture tube removal.

21 Re 8775

PHOTOFACT® Folder

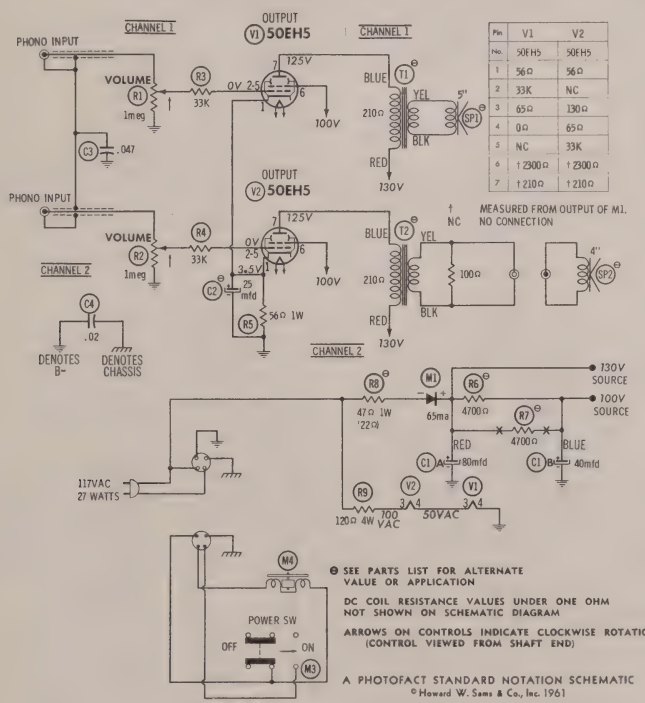
AIRLINE MODELS
GEN-760A, GEN-760B

AIRLINE MODELS
GEN-760A, GEN-760B



MODEL GEN-760B

TRADE NAME	Airline Models GEN-760A, GEN-760B
SUPPLIER	Montogmery Ward & Co., 619 Chicago Ave., Chicago 7, Illinois
TYPE SET	AC Operated 2 Tube Stereo Phono Amplifier With 4 Speed Manual Record Player
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 27 Watts, .26 Amp. @117 Volts AC (Less Motor)



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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KR303

SET 517 FOLDER 3

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			RAYTHEON •		SYLVANIA •	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 Output	50EH5	V2	Channel 2 Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA AIRLINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	80	150	E3234	PRS2230	BBRD8415	TCD4975	TDLD-11	TVA-2461	
B	40	150							
C2	25	25	E3230	PRS1360	BBR25-25	TC26	TD-25-25	TVA-1205	Note 1

Note 1. In Model GEN-760A, C2 is 20mfd and combined with C1 (Part #E3229).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C4	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA AIRLINE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg		E2540	B-70	A47-1meg-Z	Q13-137	U53	Volume, Channel 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	1meg		E2540	B-70	A47-1meg-Z	Q13-137	U53	Volume, Channel 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	33K	
R4	33K	
R5	56Ω 1W	

ITEM No.	RATING	REMARKS
R6	4700Ω	Note 1
R7	4700Ω	Note 1
R8	47Ω	(22Ω) *

ITEM No.	RATING	REMARKS
R9	120Ω 4W	IRC#PW5-120Ω

Note 1. When R6 is 2200Ω, R7 is not used.
* Used in Model GEN-760A.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA AIRLINE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2800Ω	3-4Ω	E-1126-B-2①	A-3025	A-3332	26S58	S-12Z	① Alternate Part #E1126
T2	2800Ω	3-4Ω	E-1126-B-2①	A-3025	A-3332	26S58	S-12Z	

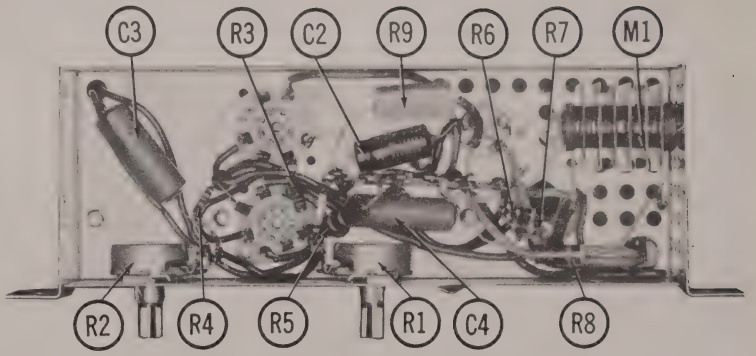
SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA AIRLINE PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3-4Ω	E1047A *	5A1	* Some versions may omit letter "A"
SP2	4"	PM	3-4Ω	E1046A *	4A07	

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA AIRLINE PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.065A	E144 *	1N1763 ♦	150 *	SR200 ♦	* Selenium Type ♦ Silicon Type

CHASSIS—BOTTOM VIEW



PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	AIRLINE PART No. CARTRIDGE	AIRLINE PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M2	60-70	CRA55X * (33-45RPM)	70-TS-TB	Not Req.					
		CRA55 * (78RPM)							

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M3	Switch	E1213	Off-On (SPST, Slide Type)
M4	Motor	E8017	Assembly, 4 Speed
	Idler Wheel		WALSCO Part #1490-01

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	E50103	Volume 1
Knob	E50104	Volume 2
Cabinet	E7070	
Cabinet	E7071	Speaker

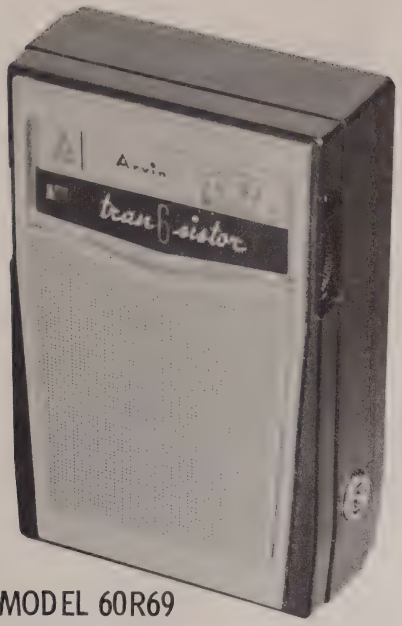
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder with CIRCUITRACE®

ARVIN MODELS 60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)

ARVIN MODELS 60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)



MODEL 60R69

TRADE NAME	Arvin Models 60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)
MANUFACTURER	Arvin Industries, Inc., Columbus, Indiana
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC
RATING	7MA @ 9 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 – 1670KC
	15MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A4, A5... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A6..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .05mfd to antenna stator lug of tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Adjust for maximum output.
2.	Loop	1670KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	1400KC Signal.	"	A5	"
4.	"	600KC	600KC	"	A6	Adjust for maximum output. Repeat Steps 1 thru 4.

ARVIN MODELS 60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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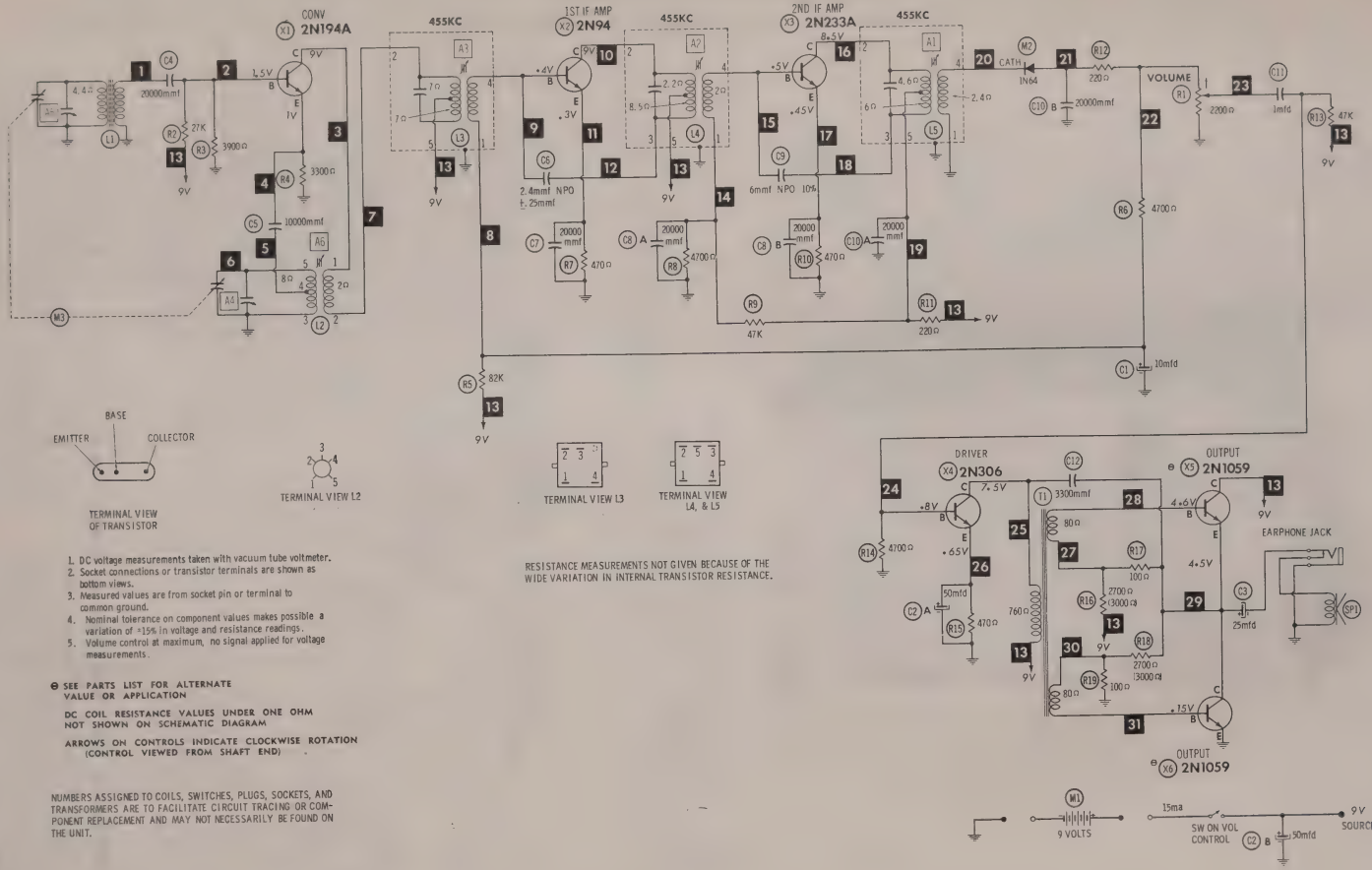

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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ARVIN MODELS 60R63, 60R69, 60R73, 60R79 (Ch. 1.50101)

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N194A	Converter		2N1367	2N194	NPN
X2	2N94	1st IF Amp.		2N1367	2N94	NPN
X3	2N233A	2nd IF Amp.		2N1367	2N233A	NPN
X4	2N306	Driver	2N649		2N306	NPN
X5	2N1059 ①	Output	2N649		2N1059	NPN
X6	2N1059 ①	Output	2N649		2N1059	NPN

① Alternate Type 2N1431.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	ARVIN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	10	44396-2	XPP-10010	NLW10-10	TT12X10	MLV10-10	TE-1114	
C2A	50	10	44397-1	BCD10X5050	ECPAN5			VL-2250	
B	50	10							
C3	25	10	44396-6	XPP-10025	NLW25-10	TT10X25	ML10-25	TE-1118	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C5	10000		C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C6	2.4 NPO ±.25mmf		NPO-DI 2.2	DTZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C7	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C8A	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
B	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C9	6 NPO 10%				C10V6C			10TCC-V56
C10A	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
B	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C11	1mfd 3V			UK-105				HY-135
C12	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ARVIN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	2200Ω	1/10	48250-1 ①	B16-212				Volume & Switch

① Alternate Part #48349-1.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	27K	
R3	3900Ω	
R4	3300Ω	
R5	82K	
R6	4700Ω	
R7	470Ω	

ITEM No.	RATING	REMARKS
R8	4700Ω	
R9	47K	
R10	470Ω	
R11	220Ω	
R12	220Ω	
R13	47K	

ITEM No.	RATING	REMARKS
R14	4700Ω	
R15	470Ω	
R16	2700Ω	(3000Ω) *
R17	100Ω	
R18	2700Ω	(3000Ω) *
R19	100Ω	

* Alternate Value.

PRINTED BOARD

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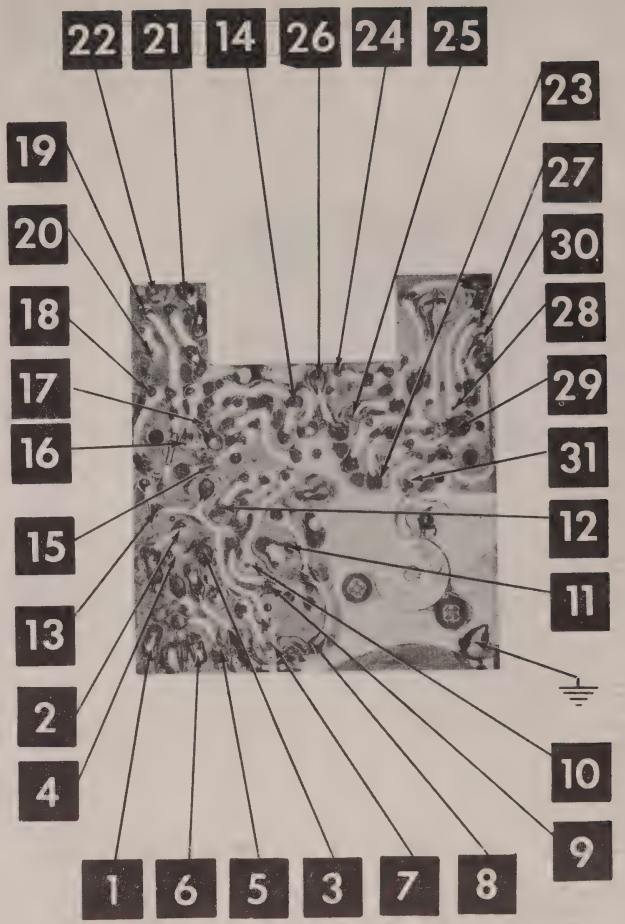


ARVIN MODELS 60R63, 60R69, 60R73, 60R79 (Ch. 1.5010I)

FOLDER 4

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ARVIN PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	44511-7				
L2	Osc. Coil	45783-15				
L3	1st IF Trans.	48197-1				
L4	2nd IF Trans.	48197-2				
L5	3rd IF Trans.	48197-3				

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ARVIN PART No.	QUAM PART No.	
SP1	2 1/4"	PM	95-105Ω	48352	22A06Z100	

BATTERIES

ITEM No.	VOLTAGE	ARVIN PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			2U6		216		M-1604	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		ARVIN PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N64	48287		1N64	1N64	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M3	Tuning Cap.	48314	2 Gang

CABINETS & CABINET PARTS

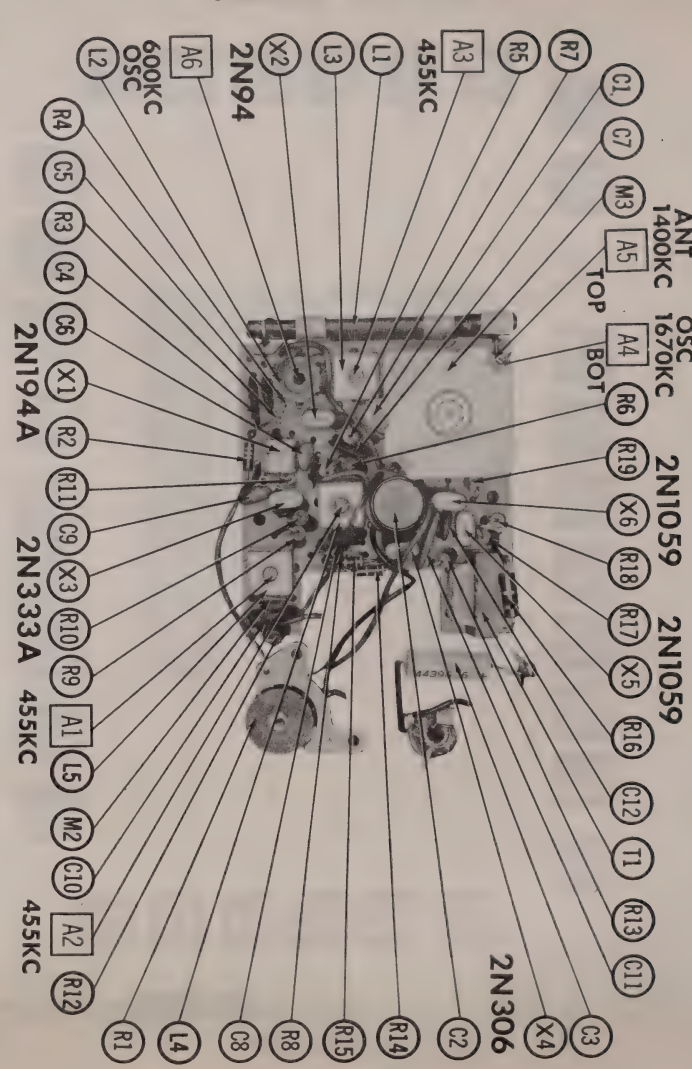
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	48347-33	Flame, Tuning
Knob	48347-29	Black, Tuning
Knob	48292-33	Flame, Volume
Knob	48292-29	Black, Volume
Cabinet	48280-33	Back, Flame
Cabinet	48280-29	Back, Black
Cabinet	48279-33	Front, Flame
Cabinet	48279-29	Front, Black

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

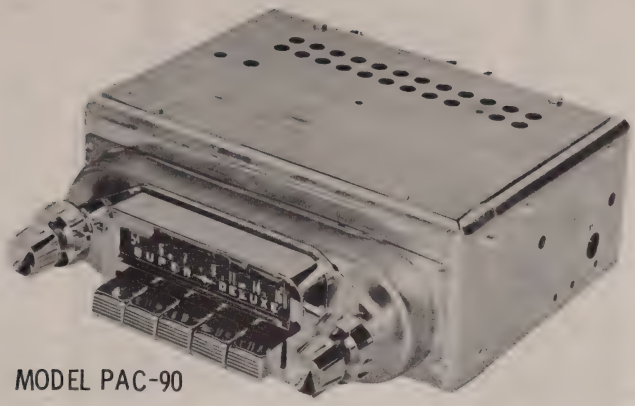
CHASSIS—TOP VIEW



PHOTOFACT® Folder

AUTOMATIC MODELS BAP-20, BP-340, CAP-60, CP-500, FAP-70, FP-260, FPA-220, FNP-430, L-390, L-559, LAP-40, OAE-10, OE-160, PAC-90, PC-350

AUTOMATIC MODELS BAP-20, BP-340, CAP-60, CP-500, FAP-70, FP-260, FPA-220, FNP-430, L-390, L-559, LAP-40, OAE-10, OE-160, PAC-90, PC-350



MODEL PAC-90

AUTOMATIC MODELS BAP-20, BP-340, CAP-60, CP-500, FAP-70, FP-260, FPA-220, FNP-430, L-390, L-559, LAP-40, OAE-10, OE-160, PAC-90, PC-350

TRADE NAME	Automatic Models	BAP-20, BP-340 (For 1960 Buick) CAP-60, CP-500 (For 1959-1960 Chevrolet) FAP-70, FP-260 (For 1960 Ford) FPA-220, FNP-430 (For 1960 Falcon) L-390, L-559, LAP-40 (For 1959-1960 Studebaker Lark) OAE-10, OE-160 (For 1960 Oldsmobile) PAC-90, PC-350 (For 1960 Pontiac)
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston 15, Mass.	
TYPE SET	Battery Operated 4 Tube - 2 Transistor Custom Built Automobile AM Receiver	
POWER SUPPLY	12 Volt Storage Battery	RATING 1.4 Amp. @12.6 Volts DC
TUNING RANGE	538 — 1610KC	

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

* Use 455KC for Manual Tuning Versions of Models CAP-60, CP-500, FAP-70, FNP-430, FP-260, FPA-220, OAE-10, OE-160

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of Converter. Low side to chassis.	265KC * (400~ Mod.)	High end stop.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1610KC	"	"	A5	"
3.	Thru dummy (Fig. 1) to antenna receptacle.	1610KC	1610KC Signal.	"	A6, A7	"
4.	With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A7 for maximum output.					

PUSHBUTTON ADJUSTMENT

1. Pull Pushbutton out.
2. Tune manually to desired station.
3. Press Pushbutton in firmly.
4. Repeat for remaining Pushbuttons.

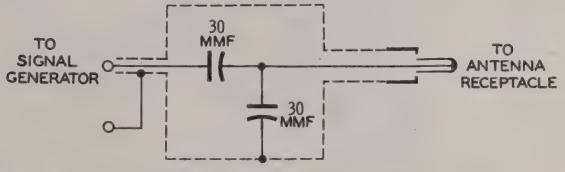


FIG. 1

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KD268

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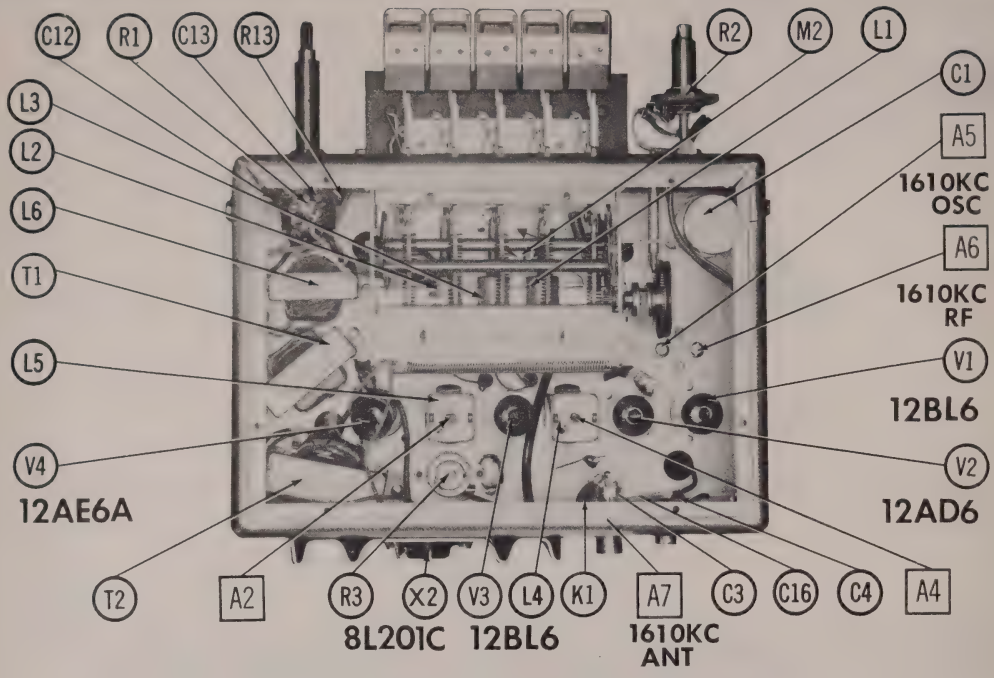
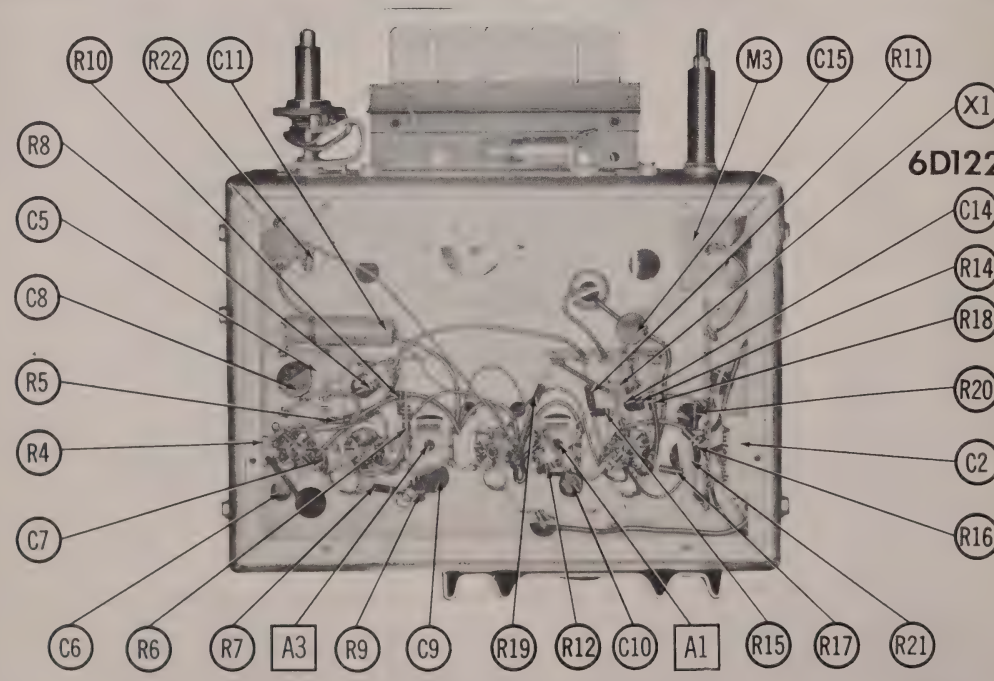
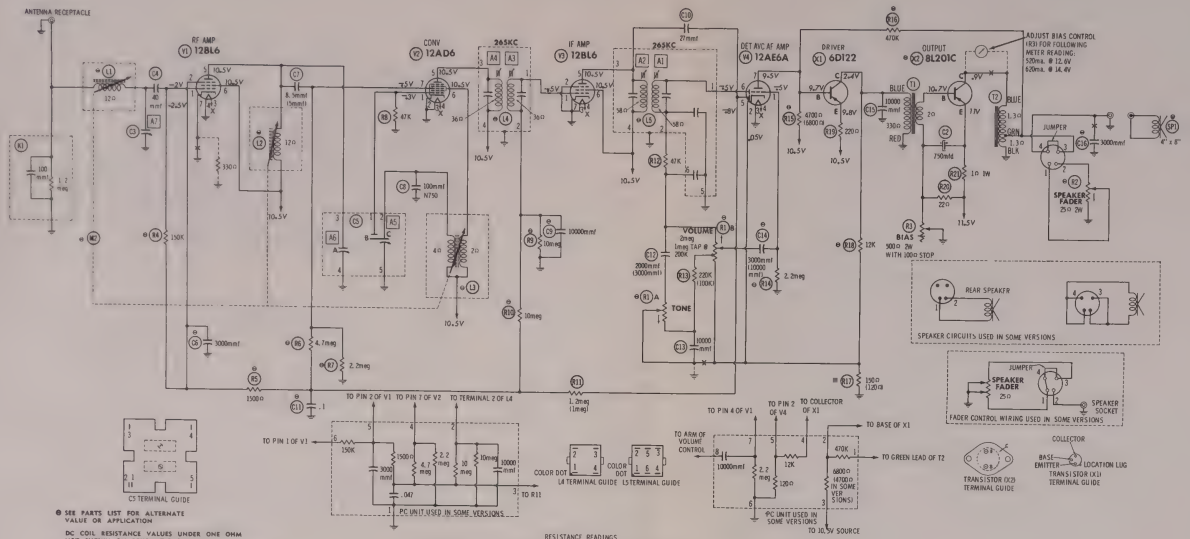
SET 517 FOLDER 5



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW



● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BL6	6meg	5.8meg	.1Ω	0Ω	170Ω	150Ω	0Ω
V2	12AD6	47K	0Ω	0Ω	.1Ω	185Ω	150Ω	2.6meg
V3	12BL6	7.5meg	0Ω	0Ω	.1Ω	230Ω	150Ω	0Ω
V4	12AE6A	2.2meg	150Ω	0Ω	.1Ω	7meg	1.1meg	4700Ω

TRANSISTOR CIRCUIT RESISTANCE FOR X1 AND X2 NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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AUTOMATIC MODELS bAP-20, BP-340, CAP-60, CP-500, FAP-70, FP-260, FPA-220, FNP-430, L-390, L-559, LAP-40, OAE-10, OE-160, PAC-90, PC-350

PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier	12BL6	V3	IF Amplifier	12BL6
V2	Converter	12AD6	V4	Det. -AVC-AF Amp.	12AE6A

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	6D122	Driver		2N362		PNP
X2	8L201C	Output				PNP Note 1

Note 1. When replacing, apply silicone grease to both sides of insulator. Tighten mounting screws securely.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	AUTOMATIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	■500	15	20-317	AFH3-00-95	B0045	WP200.6		TVLS-2157 *	①
B	▲500	15							
C2	750	3	20-757	SRE3V500	BR1000-6	PETA190	TD-1000-6	TVAS-1097 *	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Models FAP-70, FP-260 use 500-100mfd in this application (Part #20-322).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	40	#28-800L	DI-39	DD-390	L10Q39	CCD-390	GP439	5GA-Q39
C4								
C5A		#28-4046						
B								
C								

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	3000	Note 1	DI-3000	DD-302	BYA10D3	CCD-302	GP230	5GA-D30
C7	8.5	(5) †	NPO-DI 8.2	DD-080	L10V8		GP580	10TS-V80
C8	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-100	CN7-310	10TCU-T10
C9	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C10	27		DI-27	DD-270	L10Q27	CCD-270	GP427	5GA-Q27
C11	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2CP-4-104	GEM-201	2TM-P10
C12	2000	(3000) †	BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C14	3000	(10000)† Note 2	DI-3000	DD-302	BYA10D3	CCD-302	GP230	5GA-D3
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C16	3000		DI-3000	DD-302	BYA10D3	CCD-302	GP230	5GA-D3

† Alternate Value.
# Automatic Part Number.
Note 1. Item may be part of a Component Combination Unit (Part #89-591).
Note 2. Item may be part of a Component Combination Unit (Part #89-592).

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AUTOMATIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	2meg	½	80A1130	F1-68	RTV-716C			Tone. Note 1
B	1meg			R2-59	Not Req.			Volume. Note 1
	200K Tap					† QJ-1501A	■ UE4166-S	
C	Bushing			AK-26	XB2			
D	Switch			KR-4	Not Req.			
R2	25Ω	2(WW)	80A1137		39-500-100	112-500-100	FL-600S	Speaker Fader. Note 2
R3	500Ω 100Ω Stop	2(WW)	62-501					Bias

Note 1. Models L-390, LAP-40, L-559 use Part #80A663.
Models FPA-220, FNP-430, FAP-70, FP-260 use Part #80A1420.
Models CAP-60, CP-500, use Part #80A1070.
Models BAP-20, BP-340, use Part #80A1490.
Note 2. Used only in deluxe Models L-390, FPA220, FNP-430, LAP-40, L-559, FAP-70, FP-260, OAE-10, OE-160.
Models CAP-60, CP-500 use Part #80A1086.
Models BAP-20, BP-340, use Part #80A1487.
■ "STA-LOC" equivalent: FG255A, RU16T25, OS1812A, IS2250, US4l.
† "CONCENTRIKIT" equivalent: K-8 Kit with base elements and shafts: B13-139, P14-125 (Panel)
B13-137X, R1-202 (Rear)
S-8 (Bushing)
76-1 (Switch)

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	150K	①
R5	1500Ω	①
R6	4.7meg	①
R7	2.2meg	①
R8	47K	
R9	10meg	①
R10	10meg	①

ITEM No.	RATING	REMARKS
R11	1.2meg	(1meg) *
R12	47K	
R13	220K	(100K) *
R14	2.2meg	②
R15	4700Ω	(6800Ω) * ②
R16	470K	②
R17	150Ω	(120Ω) * ②

ITEM No.	RATING	REMARKS
R18	12K	②
R19	220Ω	
R20	22Ω	
R21	1.0Ω 1W	
R22	150Ω	(220Ω) *

* Alternate Value.
① Items may be part of a component combination unit in this application (Part #89-591).
② Items may be part of a component combination unit in this application (Part #89-592).

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AUTOMATIC PART No.	REPLACEMENT DATA
K1	Ant. Filter	100mmf, 1.2meg	89-4204	Sprague PRC-9

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: AUTOMATIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	Ant. Coil	①				
L2	RF Coil	①				
L3	Osc. Coil	①				
L4	Input IF Trans.	14-265A ②	BC-350	12-H1	RTC-8638	
L5	Output IF Trans.	14-267A ③	BC-354	12-H6		

① Part of Tuner Assembly M2.
② Alternate Part #14-265S Used in Models PAC-90, PC-350.
Part #14-265X Used in Models CAP-60, CP-500, OAE-10 & OE-160 (Pushbutton). Part #14-1655-6 Used in Manual Models.
Part #14-265 Used in Models FPA-220, FNP-430, FAP-70 & FP-260 (Pushbutton). Part #14-1655-6 Used in Manual Models.
Part #14-265S Used in Models LAP-40, L-559, L-390, BAP-20 & BP-340 (Pushbutton). Part #14-1655 Used in Manual Models.
③ Alternate Part #14-267S Used in Models PAC-90, PC-350.
Part #14-267X Used in Models CAP-60, CP-500, OAE-10 & OE-160 (Pushbutton). Part #14-1655-6 Used in Manual Models.
Part #14-267 Used in Models FPA-220, FNP-430, FAP-70 & FP-260.(Pushbutton). Part #14-1655-6 Used in Manual Models.
Part #14-267S Used in Models LAP-40, L-559, L-390, BAP-20 & BP-340 (Pushbutton). Part #14-1655 Used in Manual Models.

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: AUTOMATIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L6	1.4A	.9Ω	.008 HY	75A601					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO: PRI.	SEC.	REPLACEMENT DATA: AUTOMATIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	13	1	75A1303					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	REPLACEMENT DATA: AUTOMATIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	20Ω Tap ② 3-4Ω	75A1306		TA-12①			① Drill New Mounting Holes.

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: AUTOMATIC PART No.	QUAM PART No.	NOTES
SP1	4"x 8"	PM	3-4Ω	73B1170M *	48A2	* Models PAC-90, PC-350, LAP-40, L-559
	7"	PM	3-4Ω	73-853 ♦	7A21	♦ Models BAP-20, BP-340
	6"x 9"	PM	3-4Ω	73B1083 ‡	69A3	‡ Models CAP-60, CP-500
	6"x 9"	PM	3-4Ω	73-902 †	69A3	† Models FAP-70, FP-260
	5"x 7"	PM	3-4Ω	73-654 **	57A21	** Models FPA-220, FNP-430
	6"x 9"	PM	3-4Ω	73B1533 ‡‡		‡‡ Models OAE-10, OE-160
	5"x 7"	PM	3-4Ω	73B654 ♦♦		♦♦ Some Versions of BAP-20, BP-340, FPA-220, FNP-430
	6"x 9"	PM	3-4Ω	73B902 † †		†† Some Versions of FAP-70, FP-260
	4"x 8"	PM	3-4Ω	73-1170 ▲		▲ Model L-390 and some Versions of LAP-40, L-559

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: AUTOMATIC PART No. FUSE	AUTOMATIC PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	SFE	7½A 32V			30707.5 (SFE 7½A 32V)	155009	SFE 7½	HDH

MISCELLANEOUS

ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
M2	Tuner	78B1131	Pushbutton Type; Models PAC-90, PC-350, OAE-10, OE-160
	Tuner	78B1492	Pushbutton; Models BAP-20, BP-340
	Tuner	78A1471 or	Manual; Models FPA-220, FNP-430, FAP-70, FP-260
	Tuner	78B1391 or	Pushbutton
	Tuner	78B1392	Pushbutton
	Tuner	78A858A or	Manual; Models LAP-40, L-559
	Tuner	78A846	Pushbutton
	Tuner	78A1268A or	Manual; Model L-390
	Tuner	78A846	Pushbutton
	Tuner	78A1089 or	Manual, Models CAP-60, CP-500
	Tuner	78B1081 or	Pushbutton
	Tuner	78B1082	Pushbutton
M3	Spark Plate		

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	48A1037	Volume, Tuning; Model PAC-90, PC-350
Knob	48A1038-P	Tone, Fader; Model PAC-90, PC-350
Knob	48A1069	Volume, Tuning; Model CAP-60, CP-500, OAE-10, OE-160
Knob	48A1063	Tone, Fader; Model CAP-60, CP-500, OAE-10, OE-160
Knob	48A889	Tuning, Volume; Model LAP-40, L-559
Knob	47A891	Tone, Model LAP-40, L-559
Knob	47A891-1	Dummy; Model LAP-40, L-559
Knob	48A648	Tuning, Volume; Model BAP-20, BP-340
Knob	48A1477	Tone, Fader; Model BAP-20, BP-340
Knob	47-148	Tuning, Volume; Model FAP-70, FPA-220, FP-260, FNP-430
Knob	48B393	Tone, (Manual Tuner), Dummy (Pushbutton Tuner); Models FAP-70, FPA-220, FP-260, FNP-430
Knob	48B393-1	Dummy (Manual Tuner), Tone (Pushbutton Tuner); Models FAP-70, FPA-220, FP-260, FNP-430

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire .....Use BELDEN No. 8885
Bonding Strap .....Use BELDEN No. 8661

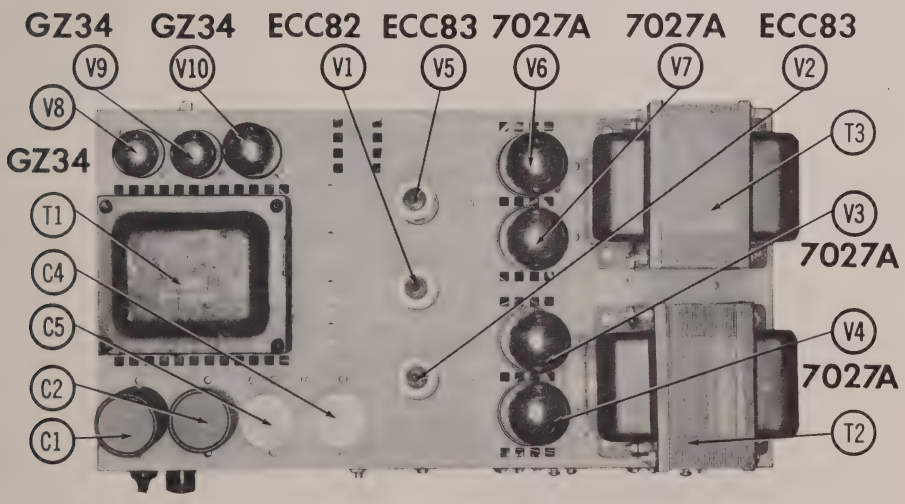
PHOTOFACT® Folder

**BOGEN
MODEL DS265**

BOGEN
MODEL DS265

BOGEN
MODEL DS265

TRADE NAME	Bogen Model DS265
MANUFACTURER	Bogen-Presto Co., A Div. of the Siegler Corp., P. O. Box 500, Paramus, N. J.
TYPE SET	AC Operated 10 Tube Stereo Amplifier
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 175 Watts, 1.7 Amp. @117 Volts AC



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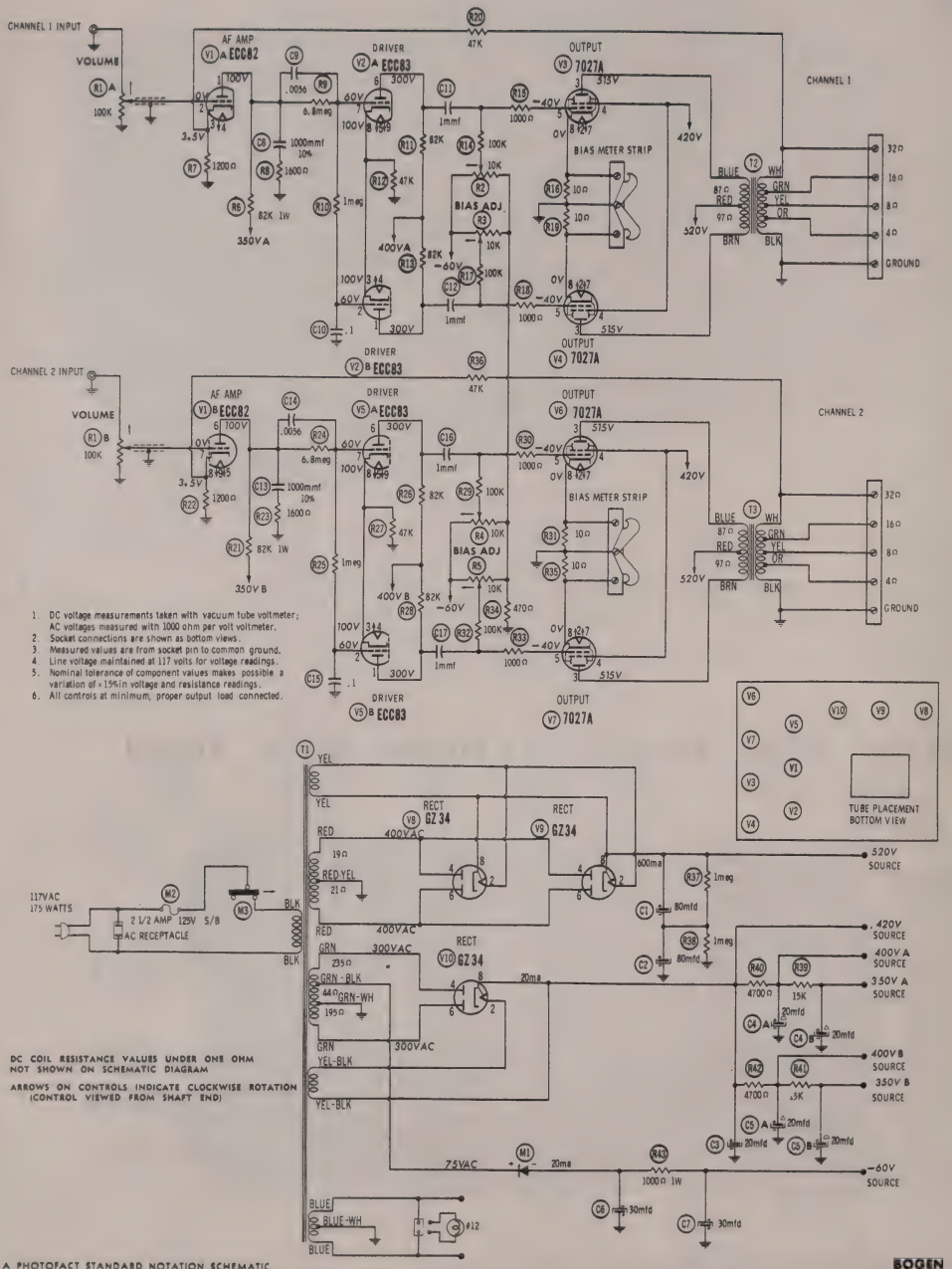
KV352

SET 517 FOLDER 6


CHANNEL 1 INPUT
VOLUME
AF AMP
DRIVER
OUTPUT
CHANNEL 1
BIAS METER STRIP
BIAS ADJ
CHANNEL 2 INPUT
CHANNEL 2
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.
TUBE PLACEMENT BOTTOM VIEW
117VAC 175 WATTS
AC RECEPTACLE
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
520V SOURCE
420V SOURCE
400V A SOURCE
350V A SOURCE
400V B SOURCE
350V B SOURCE
-60V SOURCE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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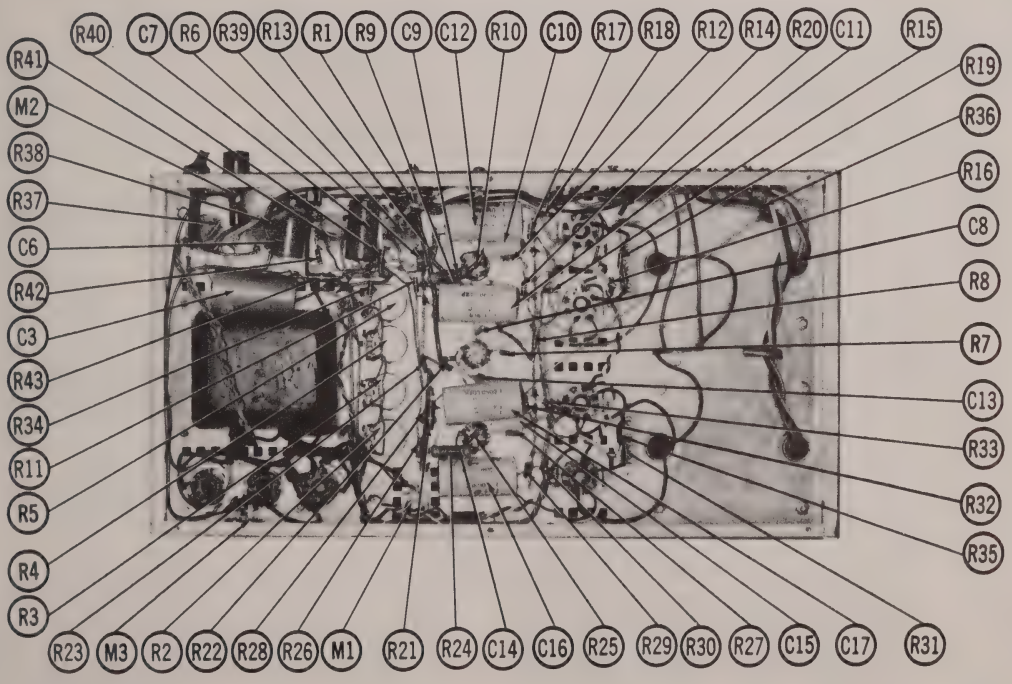
BOGEN MODEL DS265

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC82 12AU7	†102K	0Ω	1200Ω	.1Ω	.1Ω	†102K	0Ω	1200Ω	.1Ω
V2	ECC83 12AX7	†87K	†7.9meg	47K	.1Ω	.1Ω	†87K	†6.9meg	47K	.1Ω
V3	7027A	NC	.1Ω	‡87Ω	†0Ω	100K	NC	.1Ω	0Ω	
V4	7027A	NC	.1Ω	‡97Ω	†0Ω	100K	NC	.1Ω	0Ω	
V5	ECC83 12AX7	†87K	†7.9meg	47K	.1Ω	.1Ω	†87K	†6.9meg	47K	.1Ω
V6	7027A	NC	.1Ω	‡87Ω	†0Ω	100K	NC	.1Ω	0Ω	
V7	7027A	NC	.1Ω	‡97Ω	†0Ω	100K	NC	.1Ω	0Ω	
V8	GZ34 5AR4	NC	¶	NC	19Ω	NC	21Ω	NC	¶	
V9	GZ34 5AR4	NC	¶	NC	19Ω	NC	21Ω	NC	¶	
V10	GZ34 5AR4	NC	¶	NC	279Ω	NC	195Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
‡ MEASURED FROM PIN 8 OF V9 OR V8.
† MEASURED FROM PIN 8 OF V10.

NC NO CONNECTION



CHASSIS—BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	Channel 1 AF Amp. - Channel 2 AF Amp.	ECC82/12AU7
V2	Channel 1 AF Amp. - Channel 1 Phase Inv.	ECC83/12AX7
V3	Channel 1 Output	7027A
V4	Channel 1 Output	7027A
V5	Channel 2 AF Amp. - Channel 2 Phase Inv.	ECC83/12AX7
V6	Channel 2 Output	7027A
V7	Channel 2 Output	7027A
V8	Rectifier	GZ34/5AR4
V9	Rectifier	GZ34/5AR4
V10	Rectifier	GZ34/5AR4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA BOGEN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	80	300		AFH1-42	XA0401	FP138	TMS-1650	TVL-1630	
C2	80	300		AFH1-42	XA0401	FP138	TMS-1650	TVL-1630	
C3	20	500	79-001-147	PRS1830	BR2050	TC83	TD-20-500	TVA-1906	
C4A	▲20	450	79-010-008	AFH2-69	B0500	FP282.5	TMD-2760	TVL-2935	
B	▲20	450							
C5A	▲20	450	79-010-008	AFH2-69	B0500	FP282.5	TMD-2760	TVL-2935	
B	▲20	450							
C6	30	150	79-001-078	PRS1460	BR3015	TC47	TD-30-150	TVA-1412	
C7	30	150	79-001-078	PRS1460	BR3015	TC47	TD-30-150	TVA-1412	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	1000 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C9	.0056 200V			D6-562	DPMS6D56	6DP-1-562	GEM-16256	6PS-D56
C10	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C11	1.0 400V		P488N-1.0		ST4W1		GEM-41	4TM-M1
C12	1.0 400V		P488N-1.0		ST4W1		GEM-41	4TM-M1
C13	1000 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C14	.0056 200V			D6-562	DPMS5D56	6DP-1-562	GEM-16256	6PS-D56
C15	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C16	1.0 400V		P488N-1.0		ST4W1		GEM-41	4TM-M1
C17	1.0 400V		P488N-1.0		ST4W1		GEM-41	4TM-M1

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BOGEN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	100K	½	77-001-488	AB-41	AD47-100K-S		FA15A	Volume, Channel 1
B	100K	½		SR-41	Not Req.		RU15A	Volume, Channel 2
C	Shaft			AK-1	FKS-1/4		CS3500	
R2A	10K	½	77-001-400	AB-14	A47-10K-S	B11-116	SU-20	Bias Adjust 1
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	
R3A	10K	½	77-001-400	AB-14	A47-10K-S	B11-116	SU-20	Bias Adjust 2
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	
R4A	10K	½	77-001-400	AB-14	A47-10K-S	B11-116	SU-20	Bias Adjust 3
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	
R5A	10K	½	77-001-400	AB-14	A47-10K-S	B11-116	SU-20	Bias Adjust 4
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R6	82K 1W	
R7	1200Ω	
R8	1600Ω	
R9	6.8meg	
R10	1meg	
R11	82K	
R12	47K	
R13	82K	
R14	100K	
R15	1000Ω	
R16	10Ω	
R17	100K	
R18	1000Ω	

ITEM No.	RATING	REMARKS
R19	10Ω	
R20	47K	
R21	82K 1W	
R22	1200Ω	
R23	1600Ω	
R24	6.8meg	
R25	1meg	
R26	82K	
R27	47K	
R28	82K	
R29	100K	
R30	1000Ω	
R31	10Ω	

ITEM No.	RATING	REMARKS
R32	100K	
R33	1000Ω	
R34	470Ω	
R35	10Ω	
R36	47K	
R37	1meg	
R38	1meg	
R39	15K	
R40	4700Ω	
R41	15K	
R42	4700Ω	
R43	1000Ω 1W	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA BOGEN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V @ 1.7A	800VCT @ .160A (No Signal), 600A Max. Signal.	660VCT @ .040A (No Signal) 100A Max. Signal Tap @ 75V @ .020A	83-626-000					
	SEC. 3	SEC. 4	SEC. 5						
	5V @ 3.8A	5V @ 1.9A	6.3VCT 4.5A						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA BOGEN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5700Ω CT	32Ω Tap @ 16Ω, 8Ω, 4Ω	83-309-000					
T3	5700Ω CT	32Ω Tap @ 16Ω, 8Ω, 4Ω	83-309-000					

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA BOGEN PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.020A	86-0016-01 *		65A *		* Selenium Type

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA BOGEN PART No. FUSE	BOGEN PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2	3AG	2½A 125V S/B			31302.5 (3AG 2½A 125V S/B)	342001	MDL 2½	HKP

MISCELLANEOUS

ITEM No.	PART NAME	BOGEN PART No.	NOTES
M3	Switch	81-003-004	Power Off-On (SPDT, Slide Type)

PHOTOFACT® Folder with CIRCUITRACE®

MOTOROLA MODELS X19A, X19E (Ch. HS-799)

MOTOROLA MODELS
X19A, X19E (Ch. HS-799)

MODEL X19E

TRADE NAME	Motorola Models X19A, X19E (Ch. HS-799)		
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois		
TYPE SET	Battery Operated Transistorized Portable AM Receiver		
POWER SUPPLY	6 Volts DC	RATING	10MA @ 6 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	535 – 1620KC		20MA @ 6 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4....GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537
A5.....GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547
A6, A7.....GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	532KC	Tuning gang fully closed.	"	A5	"
3.	"	1620KC	Tuning gang fully open.	"	A6	"
4.	"	1400KC	1400KC Signal.	"	A7	Adjust for maximum output. Repeat Steps 2 thru 4.

DISASSEMBLY INSTRUCTIONS

CHASSIS

1. Open battery compartment and remove batteries.
2. Remove 2 screws holding cabinet back (under batteries).
3. Remove back enough for access to earphone jack.
4. Remove earphone mounting nut.
5. Unsolder battery heads on cabinet back.
6. Unsolder 5600Ω resistor and lead connected to battery life Indicator switch.
7. Remove 2 chassis mounting screws.
8. Lift chassis enough to unsolder necessary leads. Remove chassis.

SPEAKER

1. Remove chassis.
2. Remove nut from front of battery life Indicator switch.
3. Bend up 8 speaker grille mounting tabs. Remove grille and speaker gasket.
4. Bend up 3 speaker mounting tabs. Remove speaker from front.

BATTERY LIFE INDICATOR SWITCH

1. Remove chassis.
2. Perform steps 2 and 3 under 'Speakers".
3. Remove switch mounting nut. Remove switch.

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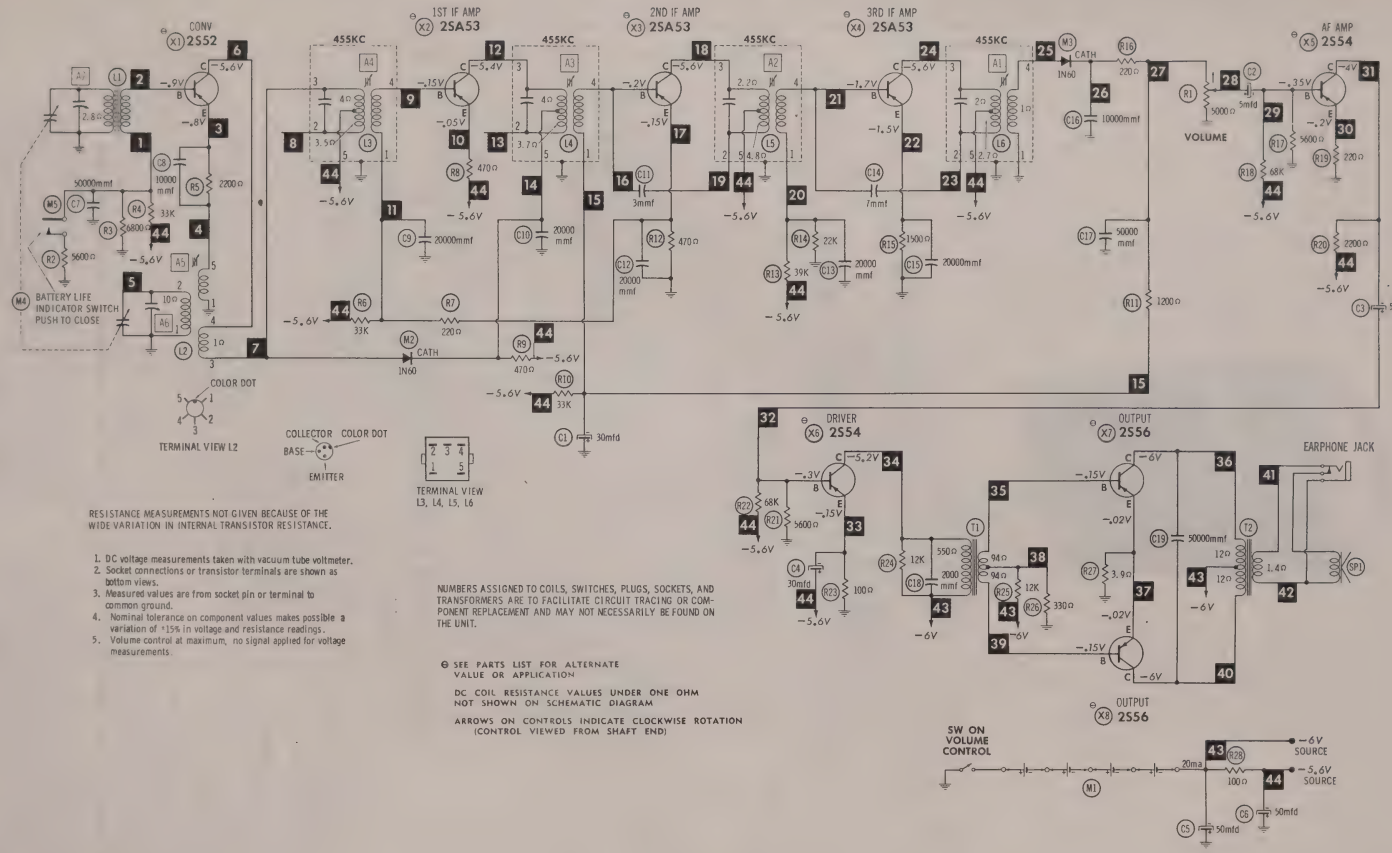
KF 313

SET 517 FOLDER 7



RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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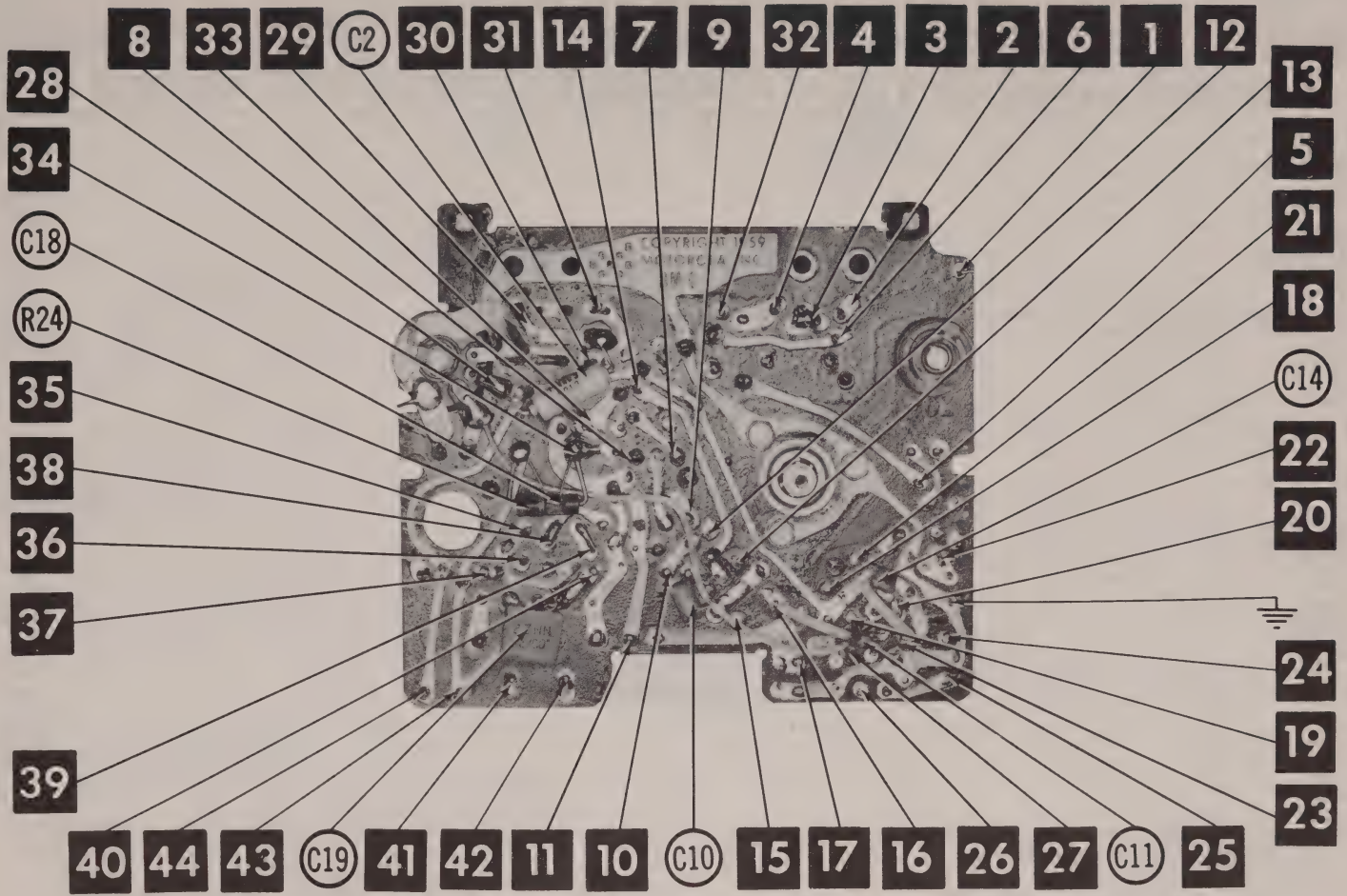
MOTOROLA MODELS X19A, X19E (Ch. HS-799)



A Howard W. Sams CIRCUITRACE* Photo

PRINTED BOARD

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2S52①	Converter	2N412	2N486	2N411	PNP
X2	2SA53②	1st IF Amplifier	2N410	2N483	2N410	PNP
X3	2SA53②	2nd IF Amplifier	2N410	2N483	2N410	PNP
X4	2SA53②	3rd IF Amplifier	2N410	2N483	2N410	PNP
X5	2S54③	AF Amplifier	2N406	2N362	2N408	PNP
X6	2S54③	Driver	2N406	2N362	2N408	PNP
X7	2SB56④	Output	2N408	2N632	2N408	PNP
X8	2SB56④	Output	2N408	2N632	2N408	PNP

① Alternate Type 2SA52.
② Alternate Type 2S53.
③ Alternate Type 2SB54.
④ Alternate Type 2S56.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	3	23K644668	XPP-3030	NLW30-6	TT6X30	ML30-3	TE-1092	
C2	5	3	23K644669	XPP-3005	NLW5-6	TT6X5	ML5-3	TE-1052.2	
C3	5	3	23K644669	XPP-3005	NLW5-6	TT6X5	ML5-3	TE-1052.2	
C4	30	3	23K644668	XPP-3030	NLW30-6	TT6X30	ML30-3	TE-1092	
C5	50	10	23K644671	XPP-10050	NLW50-10	TT10X50	ML50-12	TE-1119	
C6	50	10	23K644671	XPP-10050	NLW50-10	TT10X50	ML50-12	TE-1119	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	50000		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C8	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C9	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C10	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C11	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C12	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C13	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C14	7		NPO-DI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C15	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C16	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C17	50000		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C18	2000		DI-2000	DD-202	BYA10D2	CCD-202	GP220	10TS-D2
C19	50000		C80V503AM	DA-503	H-05S5		TA-150	TG-S50

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/10	18B646324	B16-214				Volume & Switch

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	5600Ω	
R3	6800Ω	
R4	33K	
R5	2200Ω	
R6	33K	
R7	220Ω	
R8	470Ω	
R9	470Ω	
R10	33K	

ITEM No.	RATING	REMARKS
R11	1200Ω	
R12	470Ω	
R13	39K	
R14	22K	
R15	1500Ω	
R16	220Ω	
R17	5600Ω	
R18	68K	
R19	220Ω	

ITEM No.	RATING	REMARKS
R20	2200Ω	
R21	5600Ω	
R22	68K	
R23	100Ω	
R24	12K	
R25	12K	
R26	330Ω	
R27	3.9Ω	
R28	100Ω	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	1V646647				
L2	Osc. Coil	24B646668				
L3	1st IF Trans.	24C646136				
L4	2nd IF Trans.	24K646137				
L5	3rd IF Trans.	24K646566				
L6	4th IF Trans.	24K646138				

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2.8	1	25B646139A①					① Alternate Part #25B646139

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	400Ω CT	6-8Ω	25B646134C ①					

① Alternate Part #25B646134.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	3 5/8"	PM	6-8Ω	50B646287		

BATTERIES

ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	*		930 *		1015 *		M-15R*	* 4 Required

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60	48K644681		1N60	1N60	AVC (Pigtail)
M3	1N60	48K644681		1N60	1N60	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Tuning Cap.	19B646629	2 Gang
M5	Switch	40B646613	Battery Life Indicator (Pushbutton)
	Printed Board	84C646377	Less All Components

CABINETS & CABINET PARTS

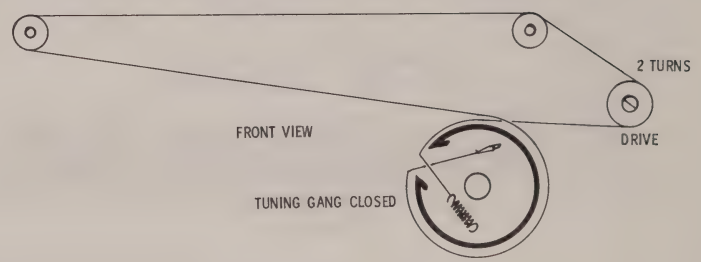
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

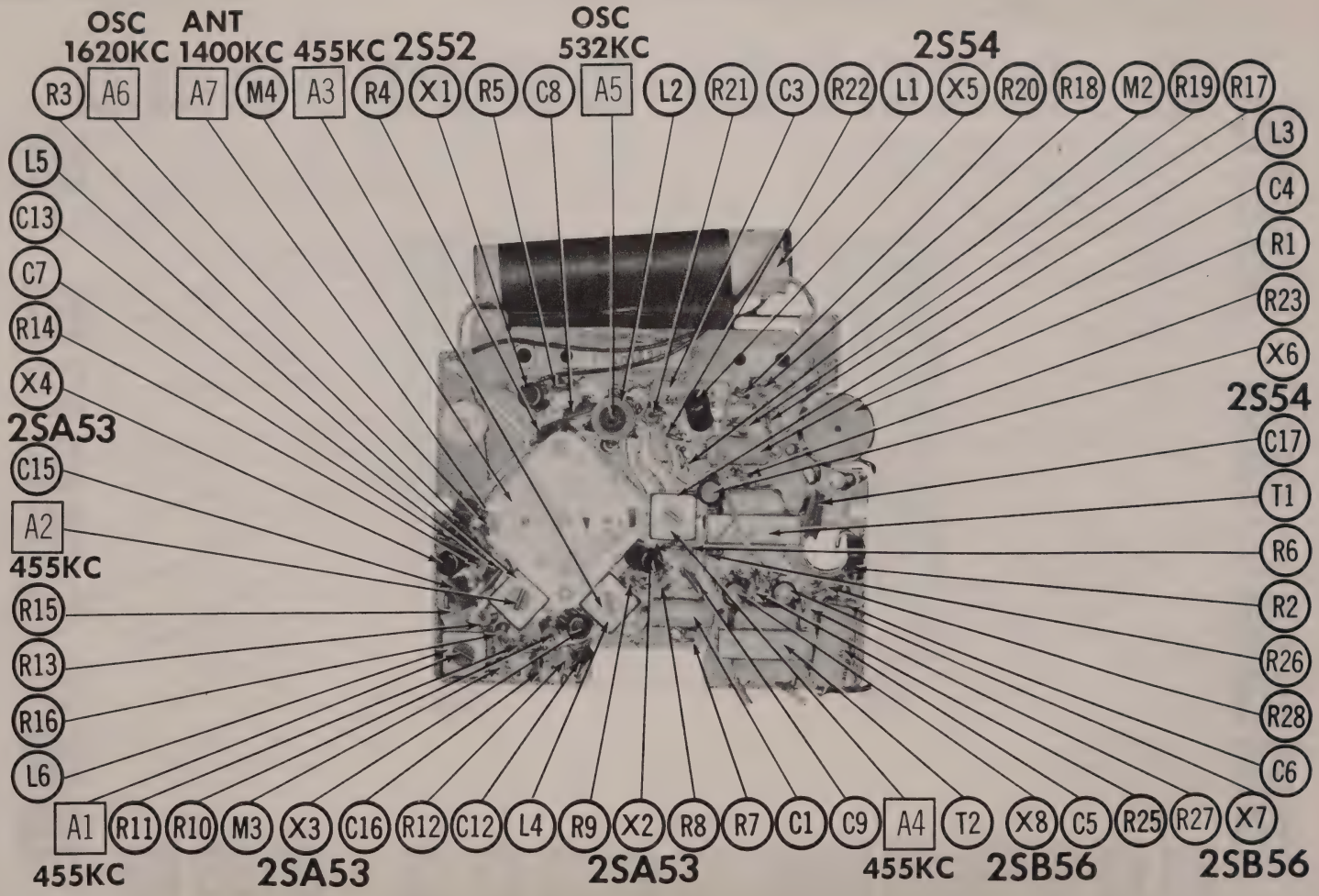
NAME	PART NO.	DESCRIPTION
Pointer	52B646247	Dial
Knob	36B646257	Tuning
Knob	36B646256	Volume
Cabinet Back	1V646656	Gray, Includes Battery Contacts, Model X19A
Cabinet Back	1V646657	Black, Includes Battery Contacts, Model X19E
Cabinet Front	1V60030A45	Gold, Complete

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TUNING DRIVE CORD STRINGING





CHASSIS TOP VIEW

PHOTOFACT® Folder

MORSE
MODEL 300

MORSE
MODEL 300

MORSE
MODEL 300

GENERAL INFORMATION

Morse Model 300 tape recorders record and play back two tracks of material on standard-width recording tape, thus doubling playing time of a 3" reel with no loss of frequency response or quality. The tape speed of the Morse 300 is 3 3/4 ips.

Using both tracks of tape, recording time is 20 minutes (10 minutes per track).

There is a self-contained power supply consisting of ten 1 1/2 volt leakproof batteries.

Supplied By:

Morse Sewing Machine & Supply Corp.
122 West 26th Street,
New York 1, New York

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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CQ446

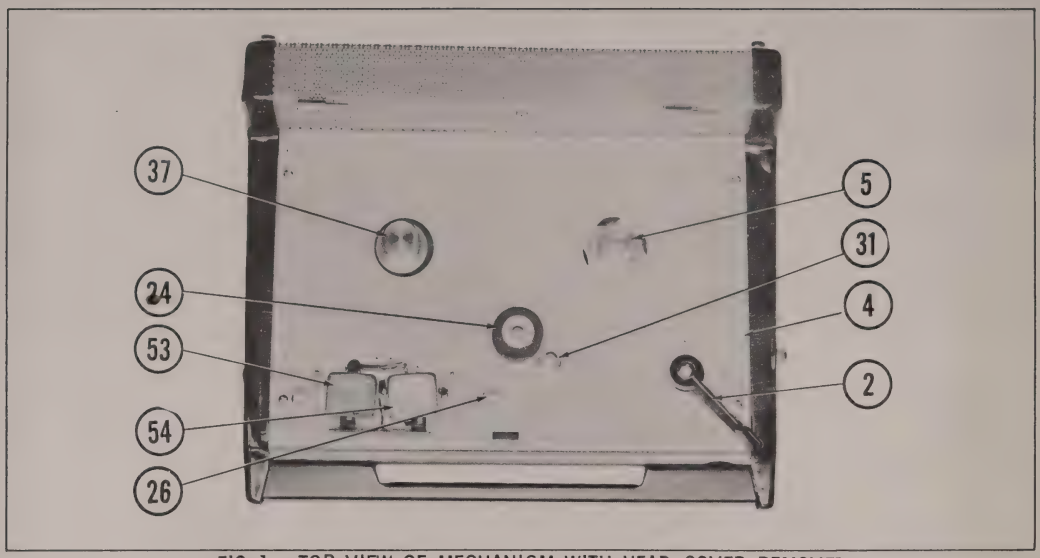


FIG. 1 TOP VIEW OF MECHANISM WITH HEAD COVER REMOVED

FUNCTION OF CONTROLS

Action Lever

The Action Lever selects the different functions of the recorder. Moving the Action Lever to Rewind, Playback or Record position energizes the motor circuit. The recorder is stopped by moving the Action Lever to the Stop position.

Safety Knob

The Safety knob prevents the Action Lever from being accidentally thrown into the Record position. This knob must be pushed toward the rear of the recorder to place the Action Lever in the Record position.

OPERATING INSTRUCTIONS

Threading Tape

1. Place a reel of tape on the left (supply) spindle and an empty reel on the right (takeup) spindle.
2. Unwind approximately 8 inches of tape from the left (supply) reel. Insert tape in tape slot and between capstan and pressure roller, making sure dull side of tape faces rear of recorder (toward reels).
3. Insert free end of tape into one of the slots on the hub of the empty reel. Turn reel several times counterclockwise until tape is secured to reel and all slack is taken up between reels.

To Record From Microphone

Insert microphone into input jack marked "MIC" and earphone into jack marked "EARPH" on left end of recorder. Thread tape as described under "Threading Tape". Place earphone in ear to monitor recording level. Push Safety knob toward rear of recorder and move Action Lever to the Record position. Adjust volume control to correct recording level while monitoring with earphone. Optimum recording results may be obtained by trying different settings of volume control and microphone distance.

To Rewind Tape

To rewind tape, move Action Lever to the Rewind position. To stop rewind, move Action Lever to Stop position.

To Play a Recording

1. Follow instructions under "Threading Tape".
2. Move Action Lever to Playback position.
3. Adjust volume control to desired listening level.
4. To stop tape transport, move Action Lever to Stop position.

Erasing Recorded Material

Any recording on tape is automatically erased before a new recording is put on tape when unit is in Record. To erase a recording without putting anything on tape, follow normal recording procedure but leave microphone disconnected and volume control at minimum.

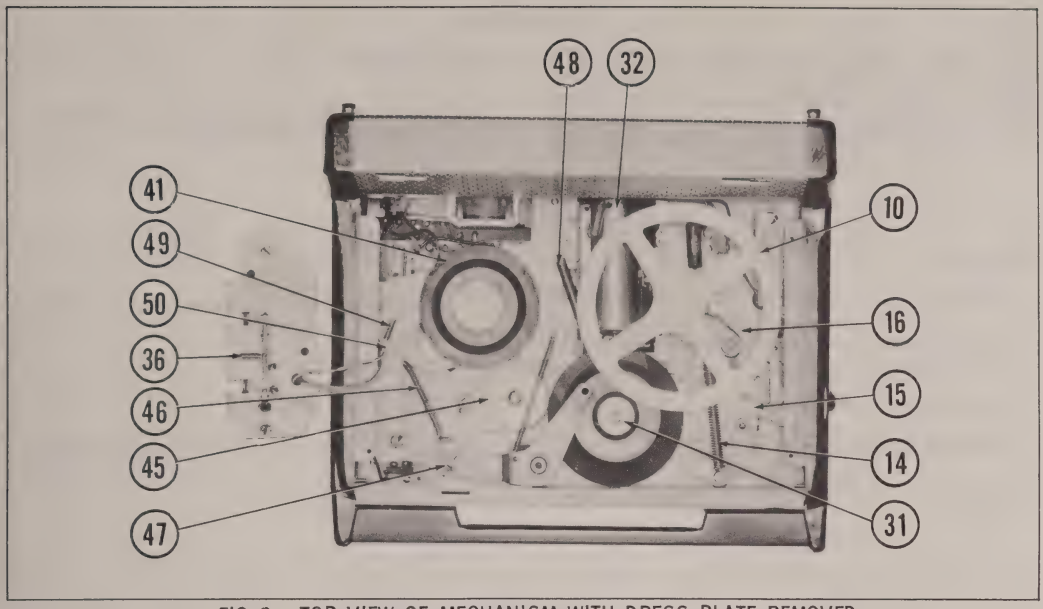


FIG. 2 TOP VIEW OF MECHANISM WITH DRESS PLATE REMOVED

To Edit and Splice Tape

NOTE: Since one track cannot be edited and spliced without affecting the other track, recordings to be edited should be limited to one track only.

1. Tape may be edited by cutting out unwanted portions or by joining selections into another sequence. Announcements may be inserted between selections etc. Unused sections can be spliced for reuse.

2. For best results, cut tape at a slight diagonal and join ends with splicing tape on the glossy side. Trim off any excess width.

Dual Track Recording

One-half the tape width is recorded at a time, which results in two-track recording. This two-track operation is accomplished in the following manner:

1. After a reel of tape has been recorded and all tape wound onto the right (takeup) reel, move the Action Lever to the Stop position.

2. Remove reels from recorder; turn reels over and place full reel on left spindle.

3. Properly thread tape and proceed with recording.

4. After second track has been recorded, first track can be played without rewinding by reversing reel as described in step 2.

DISASSEMBLY

To Remove Dress Plate From Recorder

1. Remove top case cover.

2. Remove pressure roller retaining screw (23) and pressure roller (24).

3. Remove four screws (3) holding dress plate (4).

4. Remove Action Lever screw (1) and Action Lever (2).

5. Remove Dress Plate (4).

To Remove Head Assembly

1. Remove Dress Plate (4).

2. Remove two screws (25) holding head mounting plate (27).

3. Remove head assembly.

LUBRICATION

Clean all bearings and bearing surfaces with a clean soft cloth. Apply a thin film of oil on bearing surfaces.

CLEANING

Pressure roller (24), capstan shaft (31), tape guides (26), and recording head (54) may accumulate tape oxide coating, worn off the tape as it passes these parts. This accumulation will cause poor performance and should be removed with a soft lint-free cloth dipped in alcohol.

WARNING: Do not use any cleaning solvent which contains oil or Tetrachloride.

HEAD REPLACEMENT

Erase Head

1. Remove head assembly.
2. Remove Erase head retaining screws under head assembly.
3. Unsolder head wires.
4. Remove Erase head (53).
5. To install new Erase head, reverse above procedure.

Record-Playback Head

1. Remove positioning screws on each side of head (54).
2. Unsolder head wires.
3. Remove head (54).
4. To install new head, reverse above procedure.

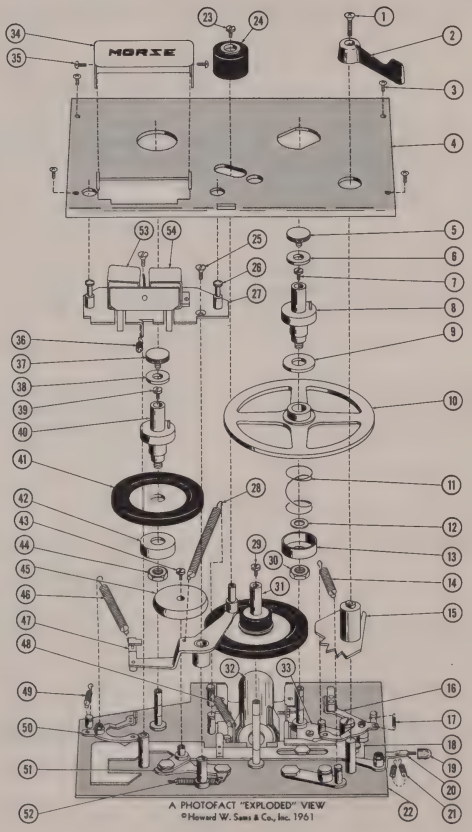


FIG.3 EXPLODED VIEW OF MECHANISM

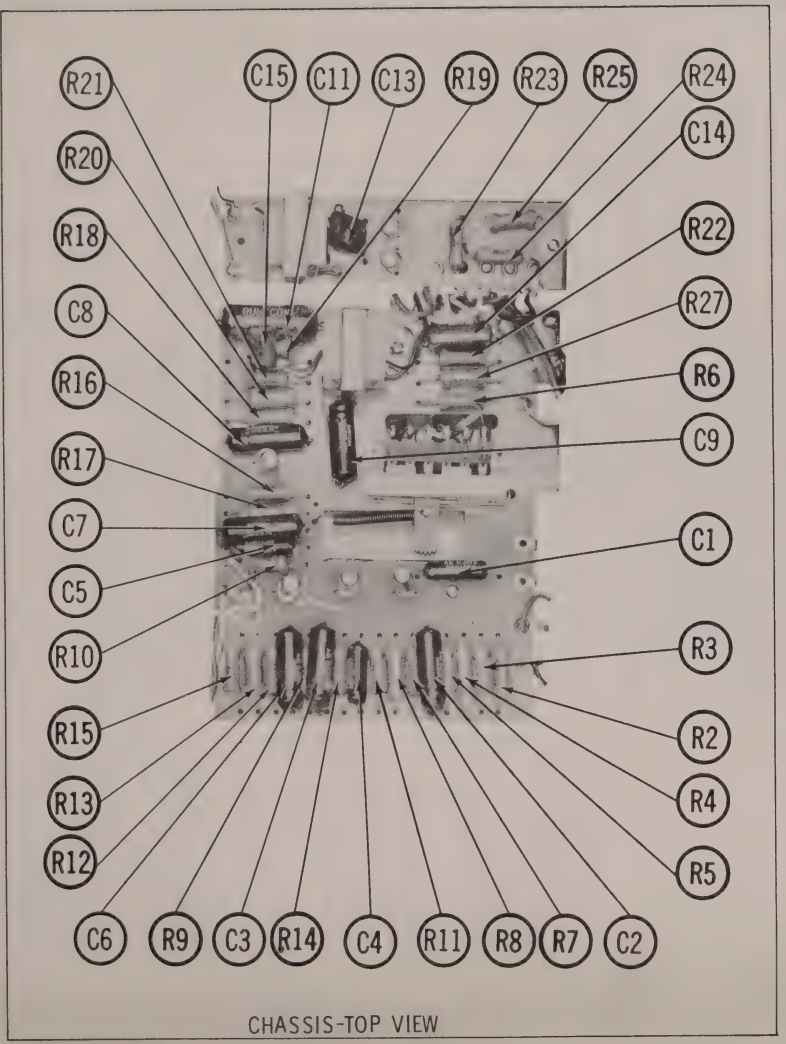
TROUBLE CHART

Symptom	Cause	Remedy
No drive on Record, Playback or Rewind.	1. Dead motor batteries.	1. Replace motor batteries.
	2. Spring (48) broken.	2. Replace spring (48).
	3. Defective motor (32).	3. Replace motor (32).
Recorder speed too slow.	1. Weak batteries.	1. Replace batteries.
	2. Oil or grease on drive wheels.	2. Clean drive wheels.
	3. Dirt or oil on capstan (31).	3. Clean capstan (31).
	4. Shafts in transport mechanism binding.	4. Clean and lubricate with fine oil.
	5. Defective takeup idler.	5. Replace takeup idler.
Does not Record.	1. Defective Record-Playback head (54).	1. Replace head (54).
	2. Broken head wire.	2. Repair head wire.
	3. Tape pressure pad holding spring (36) weak or broken.	3. Replace spring (36).

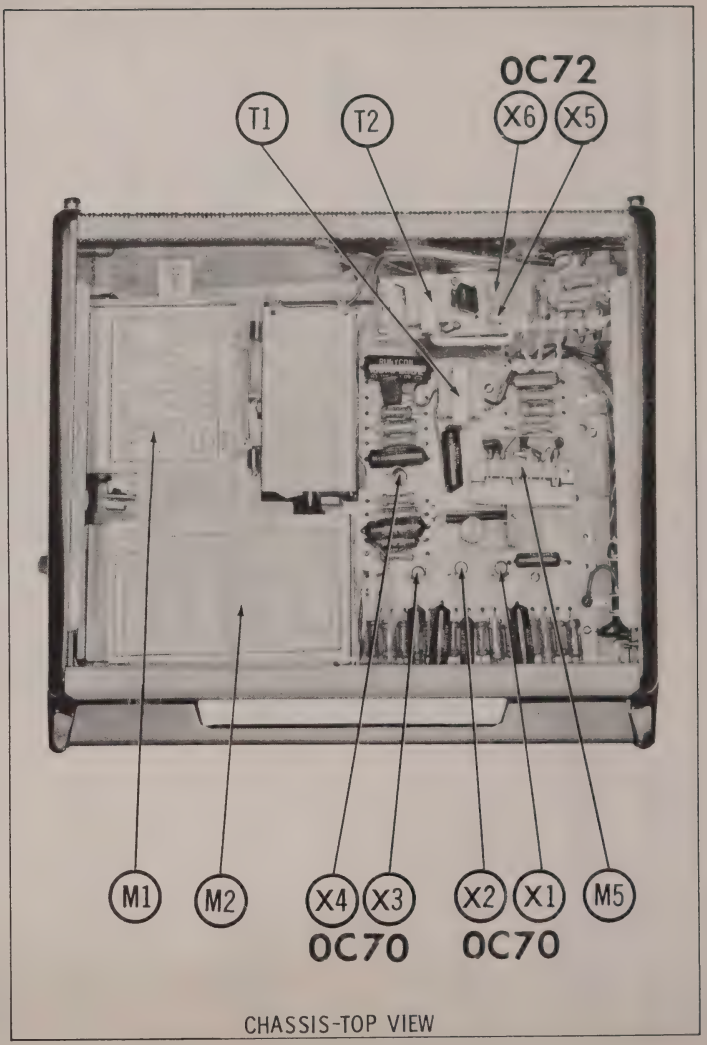
MECHANICAL PARTS LIST

Ref. No.	Description
1	Action Lever Screw
2	Action Lever
3	Screw
4	Dress Plate
5	Right Reel Retaining Screw
6	Washer
7	Screw
8	Takeup Reel Stand
9	Washer
10	Takeup Drive Wheel
11	Spring
12	Washer
13	Cup
14	Spring
15	Action Cam
16	Right Brake Bracket
17	Spring
18	Actuating Slide
19	Record Control Knob
20	Record Control Shaft
21	Record Control Pressure Spring
22	Motor Board
23	Pressure Roller Retaining Screw
24	Pressure Roller
25	Screw
26	Tape Guide
27	Head Mounting Plate

Ref. No.	Description
28	Spring
29	Capstan Retaining Screw
30	Hex Nut
31	Capstan
32	Motor
33	Plate
34	Head Cover
35	Head Cover Mounting Screw
36	Pressure Pad Spring
37	Left Reel Retaining Screw
38	Washer
39	Screw
40	Supply Reel Stand
41	Rewind Drive Wheel
42	Cup
43	Screw
44	Hex Nut
45	Rewind Drive Idler
46	Spring
47	Pressure Roller Bracket
48	Spring
49	Spring
50	Left Brake Bracket
51	Rewind Idler Lever
52	Spring
53	Erase Head
54	Record/ Playback Head



CHASSIS-TOP VIEW



CHASSIS-TOP VIEW

ELECT. PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	OC-70	Emitter Follower				
X2	OC-70	AF Amplifier				
X3	OC-70	AF Amplifier				
X4	OC-70	Driver-Bias Osc.				
X5	OC-72	Output				
X6	OC-72	Output				

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MORSE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	5	3		PTT3005	NLW5-15	TT6X5	ML5-3	TE-1052.2	
C2	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C3	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C4	5	3		PTT3005	NLW5-15	TT6X5	ML5-3	TE-1052.2	
C5	5	3		PTT3005	NLW5-15	TT6X5	ML5-3	TE-1052.2	
C6	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C7	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C8	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C9	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C10	100	10		PTT10100	NLW100-12	TT15X100	MLV100-10	TE-1119.3	
C11	100	10		PTT10100	NLW100-12	TT15X100	MLV100-10	TE-1119.3	
C12	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C13	40000			DD-403	BYB684	IDP-1-403	GPI40	4TM-S4
C14	250		1469-00025	TCZ-240	22R5T25	CM-19B-251K	MCB240	MS-325
C15	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MORSE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	10K	1/4		B16-115				Volume

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	250K	
R3	80K	
R4	150K	
R5	10K	
R6	300Ω	
R7	10K	
R8	100K	
R9	1000Ω	
R10	4000Ω	

ITEM No.	RATING	REMARKS
R11	4000Ω	
R12	10K	
R13	50K	
R14	1000Ω	
R15	4000Ω	
R16	5000Ω	
R17	50K	
R18	500Ω	
R19	300Ω	

ITEM No.	RATING	REMARKS
R20	80K	
R21	20K	
R22	30K	
R23	3500Ω	
R24	10Ω	
R25	300Ω	
R26	300Ω	
R27	60K	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MORSE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1, 2	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MORSE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	300Ω CT	6-8Ω						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MORSE PART No.	QUAM PART No.	
SP1	2 3/4" x 4"	PM	6-8Ω			

BATTERIES

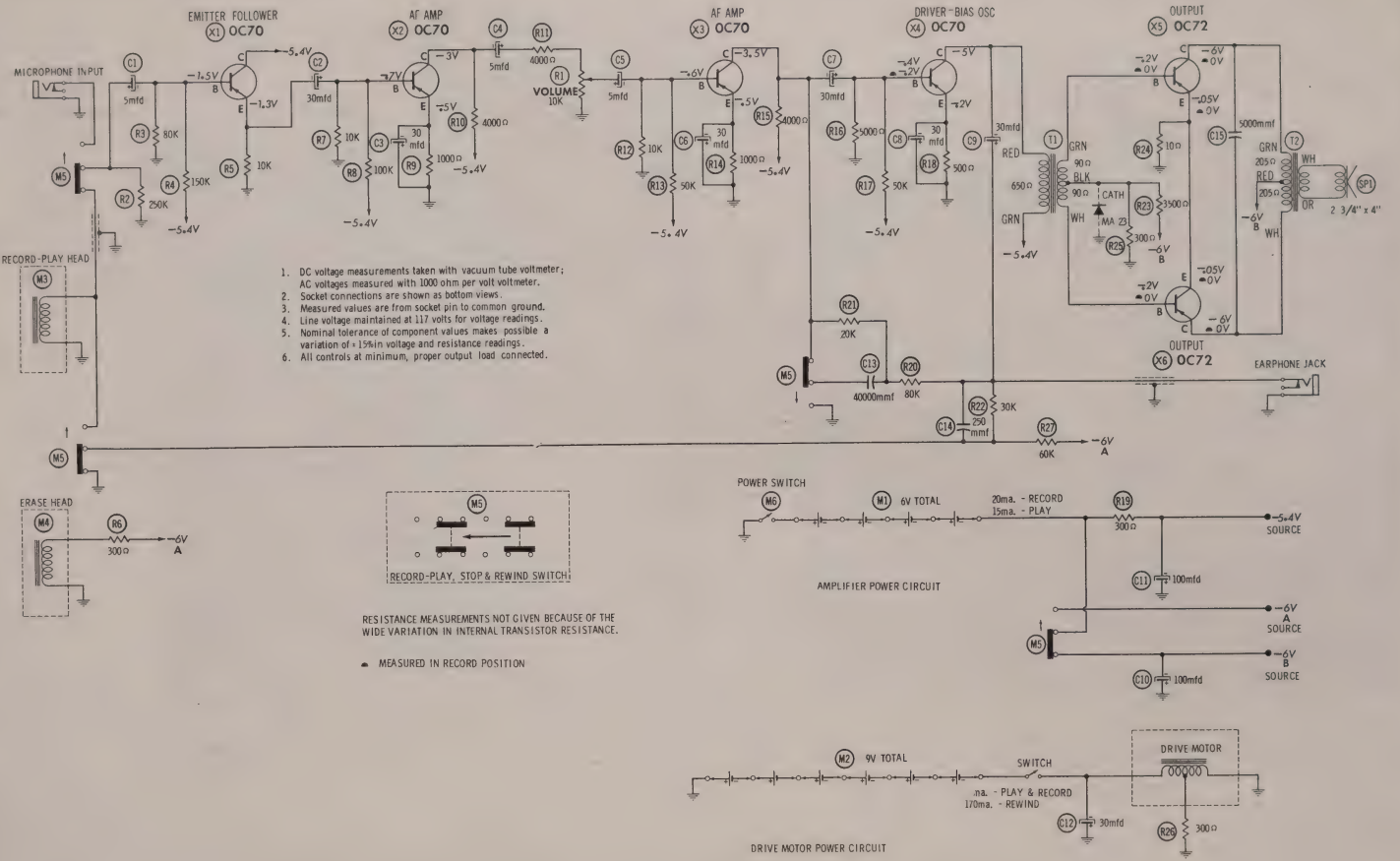
ITEM No.	VOLTAGE	MORSE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	UM-3 *		930 *		1015 *		M-15R *	* 4 Required (Amp. Supply)
M2	1.5V	UM-3 ♦		930 ♦		1015 ♦		M-15R ♦	♦ 6 Required (Motor Supply)

MISCELLANEOUS

ITEM No.	PART NAME	MORSE PART No.	NOTES
M3	Head		Record-Play
M4	Head		Erase
M5	Switch		Function (Record-Play-Stop-Rewind)
M6	Switch		Off

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No.	8401
Phono Pick-up Arm Cable	Use BELDEN No.	8430 (Two Conductor - Twisted)


EMITTER FOLLOWER
X1 OC70
AF AMP
X2 OC70
AF AMP
X3 OC70
DRIVER-BIAS OSC
X4 OC70
OUTPUT
X5 OC72
OUTPUT
X6 OC72
MICROPHONE INPUT
VOLUME 10K
RECORD-PLAY HEAD
ERASE HEAD
EARPHONE JACK
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.
RECORD-PLAY, STOP & REWIND SWITCH
RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.
MEASURED IN RECORD POSITION
POWER SWITCH
6V TOTAL
20ma. - RECORD
15ma. - PLAY
AMPLIFIER POWER CIRCUIT
9V TOTAL
SWITCH
.na. - PLAY & RECORD
170ma. - REWIND
DRIVE MOTOR
DRIVE MOTOR POWER CIRCUIT

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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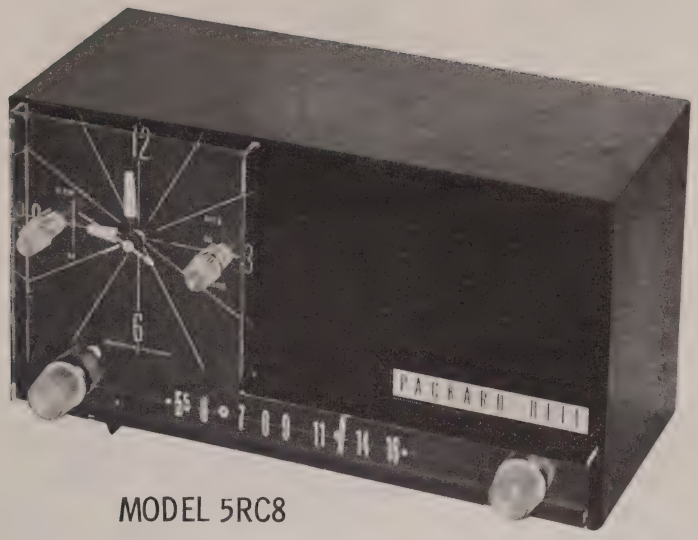
MORSE
MODEL 300

PHOTOFACT® Folder

PACKARD BELL
MODELS 5RC8, 5R8

PACKARD BELL
MODELS 5RC8, 5R8



MODEL 5RC8

PACKARD BELL
MODELS 5RC8, 5R8

TRADE NAME	Packard Bell Models 5RC8, 5R8
MANUFACTURER	Packard Bell Electronics Corp., Service Div., 1920 S. Figueroa Street, Los Angeles 7, California
TYPE SET	AC Operated 5 Tube AM Receiver (Model 5R8 is not a Clock Version)
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 26 Watts, .25 Amp. @ 117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	540 — 1620KC

ALIGNMENT INSTRUCTIONS

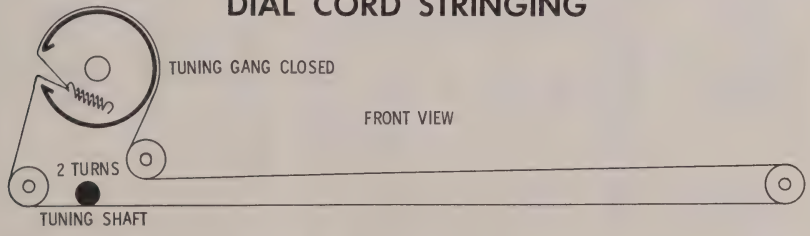
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume controls hould be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4.... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A5, A6..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of Converter. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1500KC	1500KC	"	A6	Adjust for maximum output.

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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KG286

SET 517 FOLDER 9

PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V4	Output	50C5
V2	IF Amplifier	12BA6	V5	Rectifier	35W4
V3	Det. -AVC-AF Amp.	12AV6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	24189A	PRS2210	BBRD5515	TCD49	TDLD-9	TVA-2453	
B	50	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	47 N1400	#23651						
C3	10000 375V		BPD-01	DD-103	BYA1081	CCD-103	GP110	5HK-S10
C4	10000 375V		BPD-01	DD-103	BYA1081	CCD-103	GP110	5HK-S10
C5	.1 400V		P468N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Packard Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K	½	25988	B-60	A47-500K-Z	Q13-133	U48	Volume Note 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

Note 1. Model 5R8 uses 500K Volume with Switch (Part #25085).

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	100Ω	
R3	22K	
R4	2.2meg	

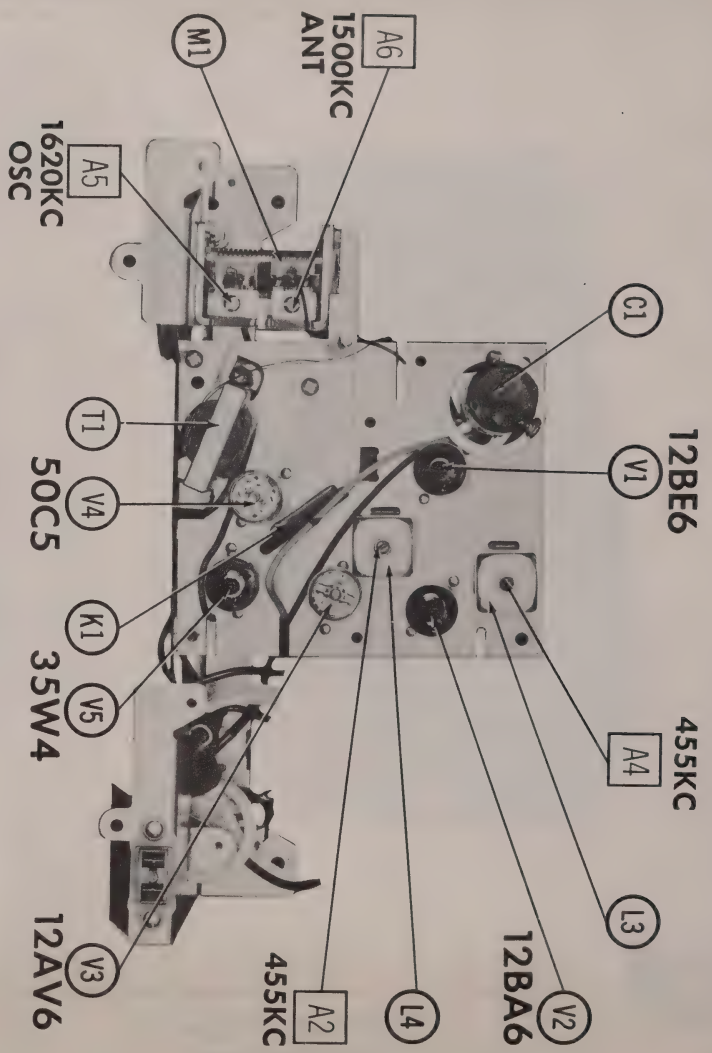
ITEM No.	RATING	REMARKS
R5	120Ω	
R6	150Ω	
R7	1000Ω 1W	

ITEM No.	RATING	REMARKS
R8	22Ω	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Packard Bell PART No.	REPLACEMENT DATA	
K1	Audio Coup. Net	220mmf, 250mmf, 2000mmf, 5000mmf, 470K, 470K, 6.8meg	23630B	Aerovox	PA113-1
				Centralab	PC-150
				Cornell-Dubilier	116TM1
				Mallory	MS-106
				Sprague	DT-1

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		Packard Bell PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	29363 ①	BC-419	705-A		
L2	Osc. Coil	29157C	BC-393	71-OSC	RTC-8647	
L3	Input IF Trans.	29155	BC-352	12-C9	RTC-8636	
L4	Output IF Trans.	29156	BC-353	12-C10	RTC-8637	

① Part #29365A Used in Model 5R8.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Packard Bell PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	89487A	A-3025	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Packard Bell PART No.	QUAM PART No.	
SP1	3½"	PM	3-4Ω	83127 *	3A07	* Alternate Part #83127C

MISCELLANEOUS

ITEM No.	PART NAME	Packard Bell PART No.	NOTES
M1	Tuning Cap.	23563	2 Gang, Ant. 24—324mmf, Osc. 14—120mmf
M2	Clock	58081	Includes Switch (Model 5CR8 Only)

CABINETS & CABINET PARTS

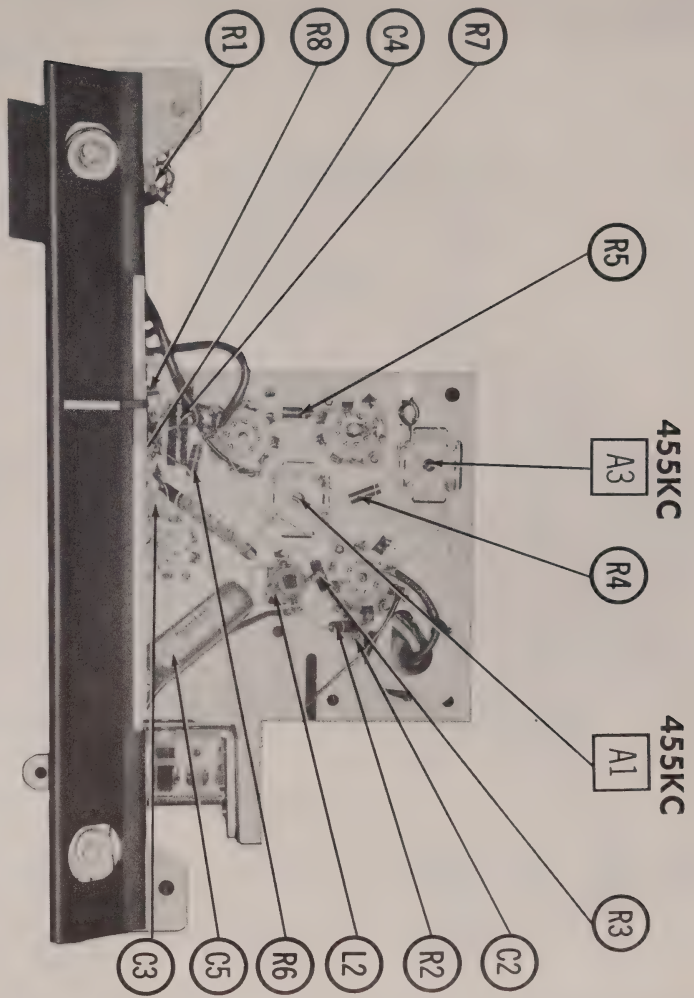
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

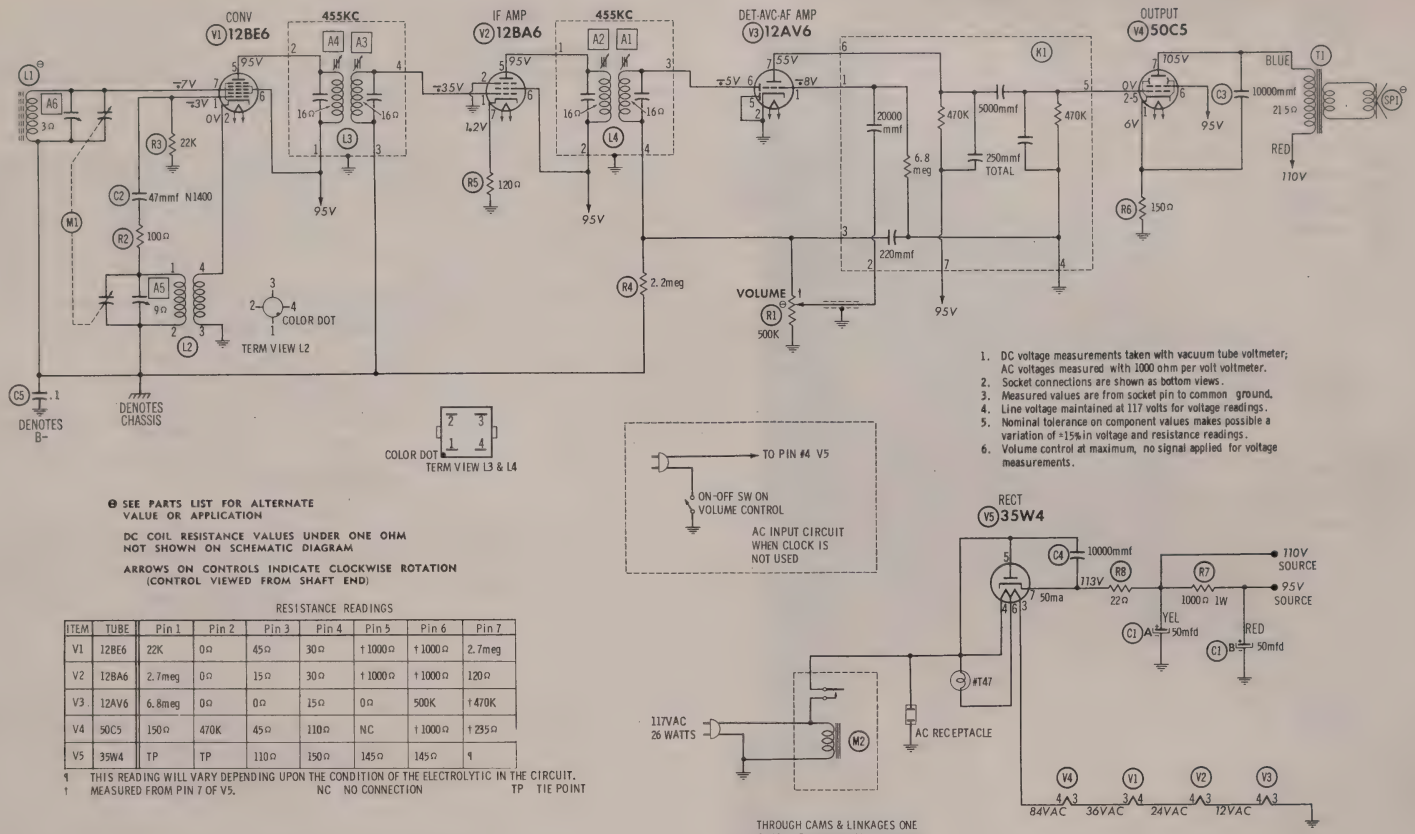
NAME	PART NO.	DESCRIPTION
Lens	55124B	Plastic, Model 5R8
Lens	55123F	Plastic, Model 5RC8
Pointer	67056D	Dial
Knob	52299C	Tuning, Volume
Knob	52300	Clock, Model 5RC8
Cabinet	21169-1	Model 5R8
Cabinet	21169	Model 5RC8

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	0Ω	45Ω	30Ω	†1000Ω	†1000Ω	2.7meg
V2	12BA6	2.7meg	0Ω	15Ω	30Ω	†1000Ω	†1000Ω	120Ω
V3	12AV6	6.8meg	0Ω	0Ω	15Ω	0Ω	500K	†470K
V4	50C5	150Ω	470K	45Ω	110Ω	NC	†1000Ω	†235Ω
V5	35W4	TP	TP	110Ω	150Ω	145Ω	145Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION TP TIE POINT

THROUGH CAMS & LINKAGES ONE SWITCH PERFORMS ALL FUNCTIONS OF ON-OFF-AUTO & SLEEP.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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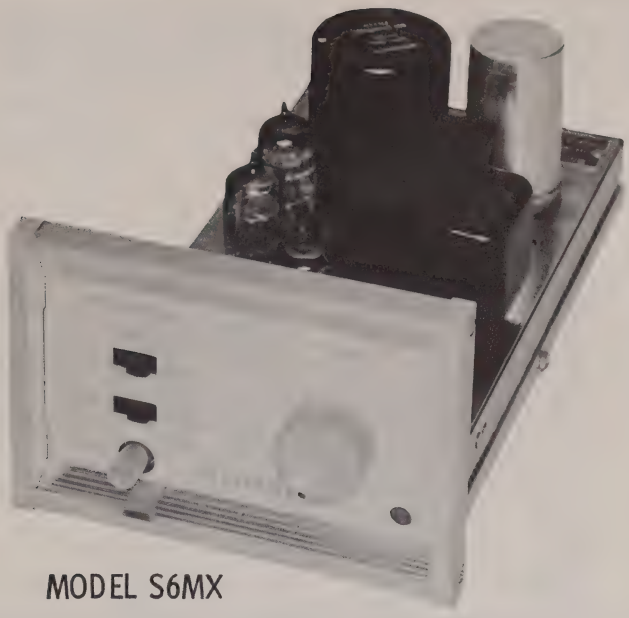
PACKARD BELL
MODELS 5RC8, 5R8

PHOTOFACT® Folder

SHERWOOD MODELS S2MX, S4MX, S6MX, SWMX

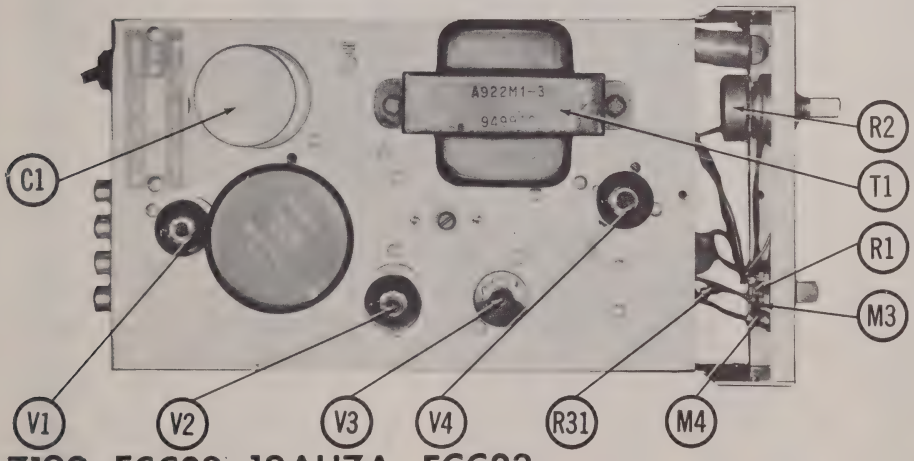
SHERWOOD MODELS
S2MX, S4MX, S6MX, SWMX



MODEL S6MX

SHERWOOD MODELS
S2MX, S4MX, S6MX, SWMX

TRADE NAME	Sherwood Models S2MX, S4MX, S6MX, SWMX
MANUFACTURER	Sherwood Electronic Laboratories, Inc., 4300 N. California Ave., Chicago 18, Illinois
TYPE SET	AC Operated 4 Tube Multiplex Adapter
POWER SUPPLY	110 - 125 Volts AC, 60 Cycles RATING 16 Watts, 15 Amp. @117 Volts AC



7199 ECC83 12AU7A ECC83

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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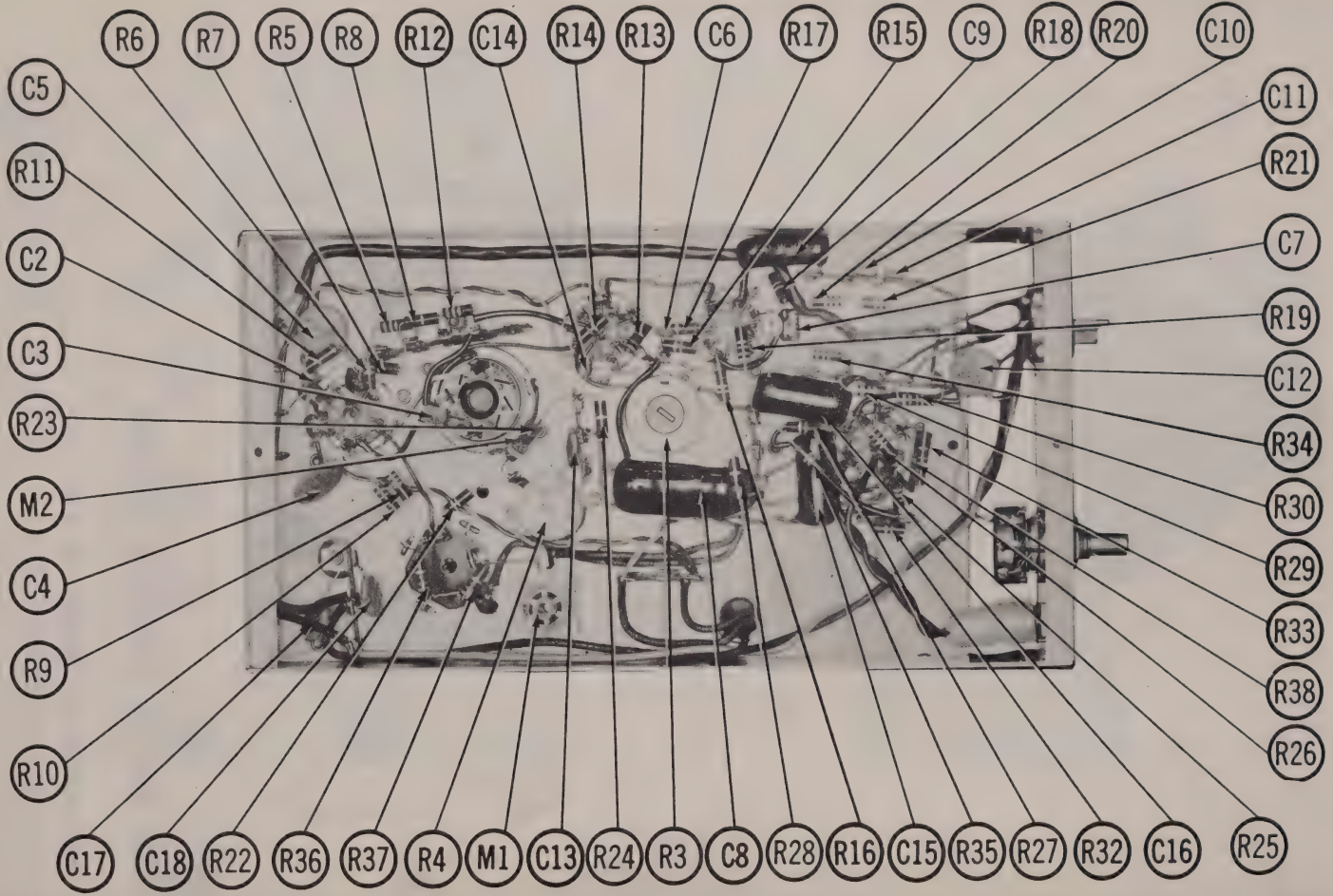
KZ290

SET 517 FOLDER 10



CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	Sub Carrier Cath. Follower-Sub Carrier Amplifier	7199
V2	Sub Carrier Amplifier	ECC83/12AX7
V3	Sub Carrier Amplifier	12AU7A
V4	Squelch Amp. -Matrix Amp.	ECC83/12AX7

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SHERWOOD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▪60	200		AFH3-25-50	B0190	FP250	TMD2205	TVLS-3485.5*	
B	▲60	200			BR4025	TC68	TD-40-250		
C	▲40	200							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	180		DI-180	DD-181	L10T18	CCD-181	GP318	10TS-T18
C3	1000		BPD-001	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C4	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C5	50000		BPD-05	DD-503			GP150	5HK-S50
C6	180		DI-180	DD-181	L10T18	CCD-181	GP318	10TS-T18
C7	150 5%			DTZ-150			CNO-315	10TCC-T15
C8	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C9	.047 400V 10%		V84C4S47-10%		PM2S47	4DP-3-473		4TM-S47
C10	270 10%		DI-270	DD-271	L10T27	CCD-271	GP327	10TS-T27
C11	680 10%		DI-680	DD-681	L10T68	CCD-681	GP368	10TS-T68
C12	50000 50V		BPD-05	DD-503			GP150	5HK-S50
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C14	390		DI-390	DD-391	L10T39	CCD-391	GP339	10TS-T39
C15	.15 200V		P288N-15		CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C16	.15 200V		P288N-15		CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C17	2000 1400V		DAC-3	DD30-202	HVC16D2	3CCD-202	UAC-220	30GA-D20
C18	2000 1400V		DAC-3	DD30-202	HVC16D2	3CCD-202	UAC-220	30GA-D20

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SHERWOOD PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	500K		A670M2					MX Level
R2A	100K		A670M1					Balance A
B	500K							Balance B
R3A	3000Ω		A670M3	TT-8	B47-3000-S	B11-112	SU-8	MX Frequency
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R4	3000Ω	2(W-W)			39-3000	112-3000	FL3K	Mute Adjust

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	470K	
R6	100K	
R7	1200Ω	
R8	2200Ω	
R9	47K	
R10	33K	
R11	1200Ω	
R12	470K	
R13	6800Ω	
R14	22K	
R15	22K	
R16	12K	

ITEM No.	RATING	REMARKS
R17	1200Ω	
R18	100K	
R19	47K	
R20	47K	
R21	47K	
R22	100K	
R23	1meg	
R24	1meg	
R25	270K	
R26	470K	
R27	22K	
R28	1meg	

ITEM No.	RATING	REMARKS
R29	47K	
R30	47K	
R31	47K	
R32	22K	
R33	68Ω	
R34	47K	
R35	120K	
R36	680Ω	
R37	680Ω	
R38	3.3Ω 1W	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA SHERWOOD PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V@ .15A	110V@ .010A	6.3VCT @1.4A	A922M1-3					

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA SHERWOOD PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.010A	*	1N1763 ♦	65A *	SR200 ♦	* Selenium Type ♦ Silicon Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA SHERWOOD PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M2	1N87			1N87	1N87	Multiplex Det. (Pigtail)

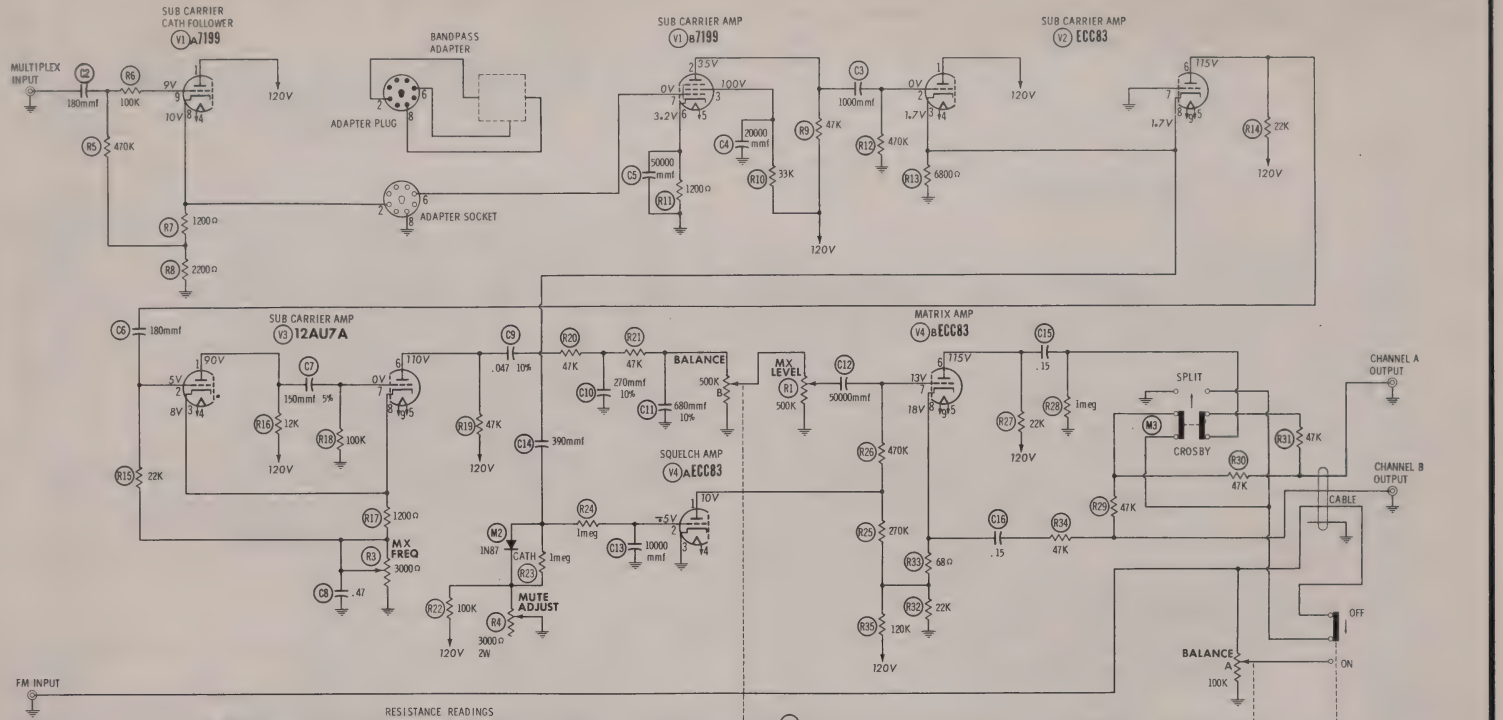
MISCELLANEOUS

ITEM No.	PART NAME	SHERWOOD PART No.	NOTES
M3	Switch		Split-Crosley (DPDT, Slide Type)
M4	Switch		Power Off-On (DPDT, Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7199	†1400Ω	†48K	†34K	.5Ω	.5Ω	1200Ω	100K	3400Ω	570K
V2	ECC83 12AX7	†1400Ω	470K	6800Ω	.5Ω	.5Ω	†23K	0Ω	6800Ω	.5Ω
V3	12AU7A	†13K	24K	3500Ω	.5Ω	.5Ω	†48K	100K	3500Ω	.5Ω
V4	ECC83 12AX7	†400K	1.3meg	0Ω	.5Ω	.5Ω	†23K	800K	18K	.5Ω

† MEASURED FROM OUTPUT OF M1.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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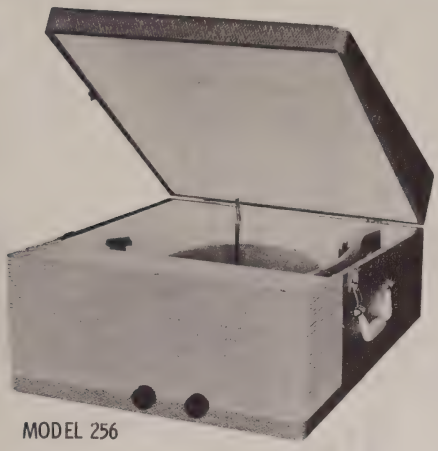
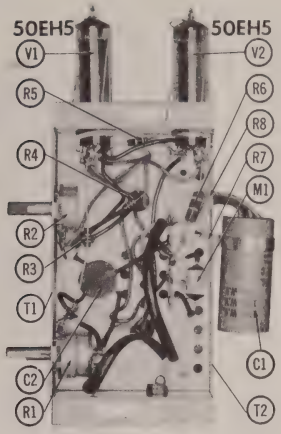
SILVERTONE MODELS 256, 1262
(Ch. 528.59750, 528.59810)

SILVERTONE MODELS 256, 1262
(Ch. 528.59750, 528.59810)



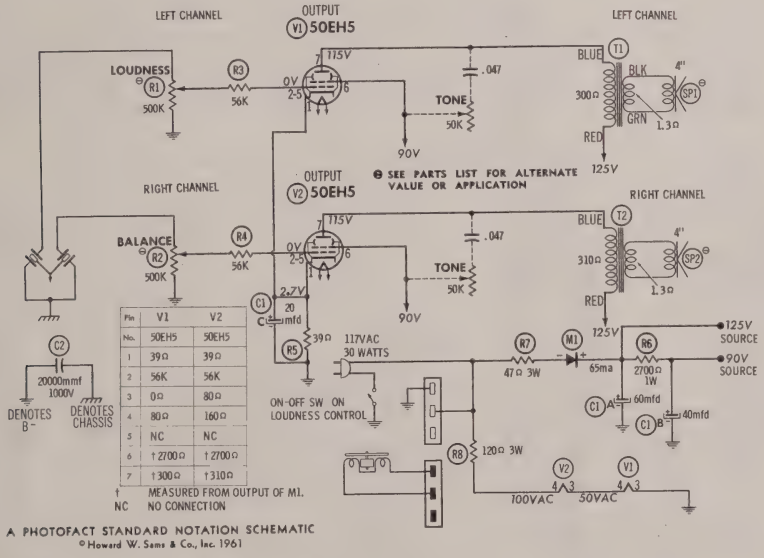
MODEL 256



TRADE NAME	Silvertone Models 256 (Ch. 528.59750), 1262 (Ch. 528.59810)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	AC Operated 2 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 30 Watts, .32 Amp. @ 117 Volts AC (Less Motor)

MODEL 256 USES RECORD CHANGER 528.57270 OR 528.57271.
MODEL 1262 USES RECORD CHANGER 528.57290 OR 528.57291.

FOR SERVICE INFORMATION ON RECORD CHANGER – SEE SIMILAR SILVERTONE 528.56100 SERIES – PHOTOFACT SET 417 FOLDER 10 OR RECORD CHANGER MANUAL RC-12



Pin No.	V1 50EH5	V2 50EH5
1	39Ω	39Ω
2	56K	56K
3	0Ω	80Ω
4	80Ω	160Ω
5	NC	NC
6	†2700Ω	†2700Ω
7	†300Ω	†310Ω

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HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 517 FOLDER 11

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	Left Channel Output	50EH5
V2	Right Channel Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	18-26-2	PRS4575	BBRT5515	TCT3119	TDLT-18	TVAS-3436.3*	
B	40	150							
C	20	20							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	EMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	20000 1000V		BPD-02				UAC-120	10HKB-S22

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	1/2	24-413 ①	B-60-S	A47-500K-Z	Q13-133	U48	Loudness, Channel 1
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	U8-26	Power On-Off
R2A	500K	1/2	24-412 ②	B-60	A47-500K-Z	Q13-133	U48	Balance, Channel 2
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

① Model 1262 uses Dual 500K Loudness, Less Switch (Part #24-418).
② Model 1262 uses Dual 50K Tone, With Switch (Part #24-419).

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	56K	
R4	56K	

ITEM No.	RATING	REMARKS
R5	39Ω	
R6	2700Ω 1W	

ITEM No.	RATING	REMARKS
R7	47Ω 3W	
R8	120Ω 3W	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA SILVERTONE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2800Ω	6-8Ω	80-121-1	A-2902①	A-3849①	22S86①	S-62X	① Drill New Mounting Hole(s)
T2	2800Ω	6-8Ω	80-122-1	A-2902①	A-3849①	22S86①	S-62X	

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	4"	PM	6-8Ω	33-447-4 *	4A05Z8	* Used in Model 256
SP2	4"	PM	6-8Ω	33-447-4 *	4A05Z8	‡ Used in Model 1262
	5 1/4"	PM	6-8Ω	33-480-4 ‡		
	5 1/4"	PM	6-8Ω	33-453-4 ‡		

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA SILVERTONE PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.065A	86-23-3 *	1N1763 *	K200 *	SR200 *	* Silicon Type

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	SILVERTONE PART No. CARTRIDGE	SILVERTONE PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M2	33-323-0	83-1338 * (78RPM)	86-TS-TB	N8-3 * (78RPM)	96T	Not Req.	12TH-S	Not Req.	
		83-1288 * (LP)		N7-7 * (LP)					

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Motor	59-162	Complete, Changer Ch. 528.57270, 528.57290
	Motor	59-158	Complete, Ch. 528.57271, 528.57291

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	52-1267-0	Loudness, Model 1262
Knob	52-1241-0	Balance, Model 1262
Knob	52-1274-0	On-Off-Tone, Model 1262
Knob	52-1402-0	Volume, Model 256
Cabinet	42-119-2	Includes Lid, Model 1262
Cabinet	42-126-2	Includes Hardware, Model 256
Cabinet	42-86-4	Speaker, Model 1262
Handle	49-594	Model, 1262
Handle	49-113	Model 256

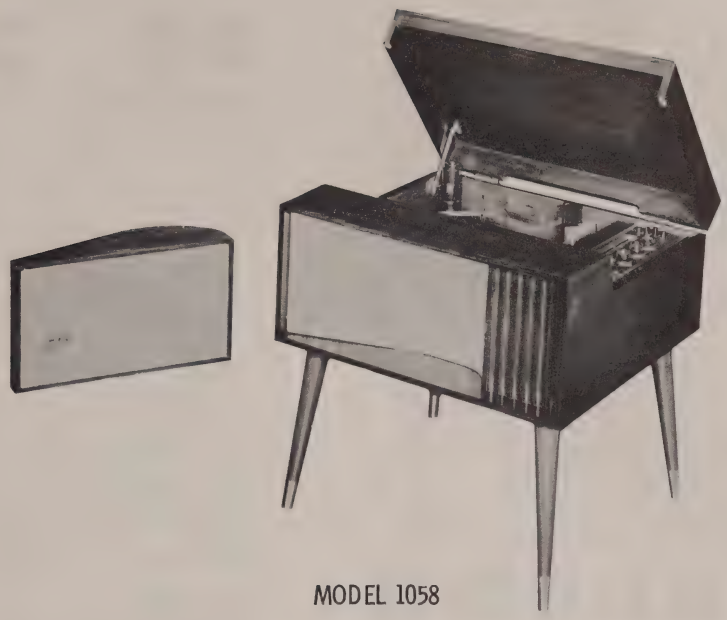
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder with CIRCUITRACE®

SILVERTONE MODELS 1057, 1058, 1059, 1060, 1061, 1062 (Ch. 528.53990, 528.54010, 528.54020)

SILVERTONE MODELS 1057, 1058, 1059, 1060, 1061, 1062 (Ch. 528.53990, 528.54010, 528.54020)



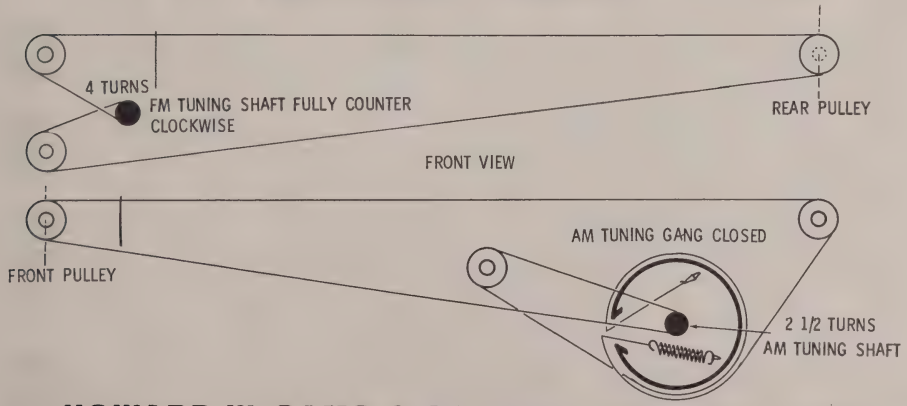
MODEL 1058

SILVERTONE MODELS 1057, 1058, 1059, 1060, 1061, 1062 (Ch. 528.53990, 528.54010, 528.54020)

TRADE NAME	Silvertone Models 1057 (Ch. 528.53990); 1058, 1059, 1060 (Ch. 528.54010); 1061, 1062 (Ch. 528.54020)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	AC Operated 8 Tube FM-AM Receiver With Stereo Amplifier And 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 34 Watts, .4 Amp. @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER 528.57340 OR 528.57341 — SEE SIMILAR SILVERTONE 528.56100 SERIES — PHOTOFACT SET 417 FOLDER 10 OR RECORD CHANGER MANUAL RC-12

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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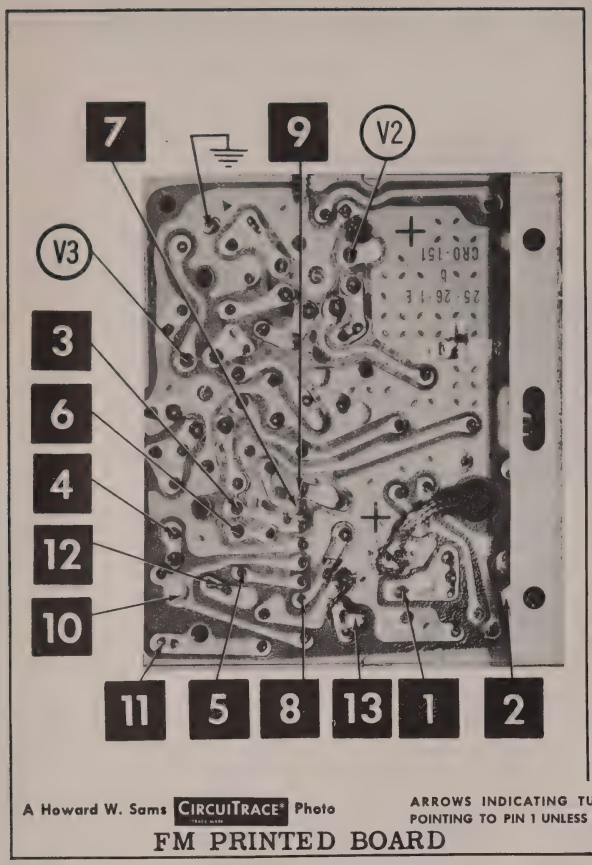
KN399

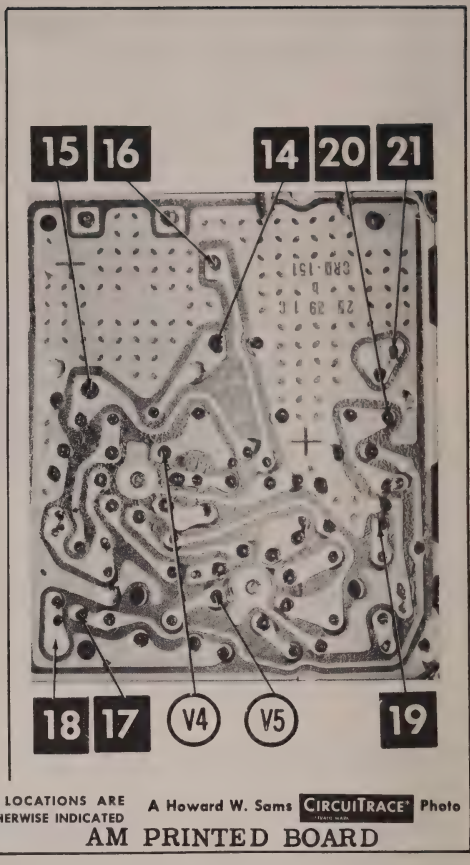
SET 517 FOLDER 12



A Howard W. Sams CIRCUITRACE® Photo

FM PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



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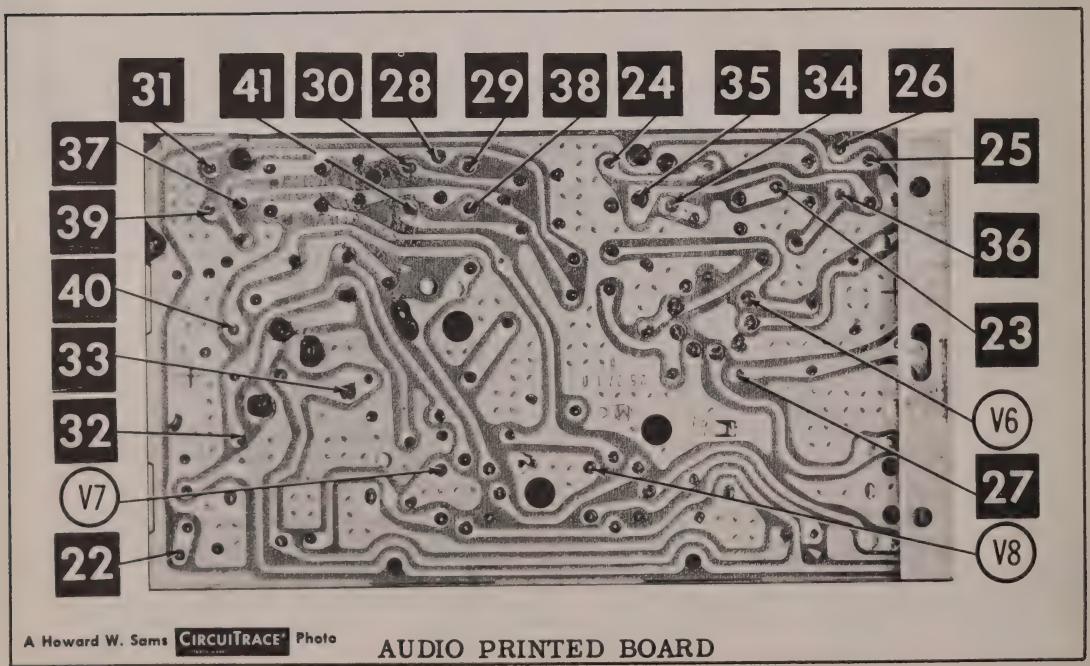
AM PRINTED BOARD



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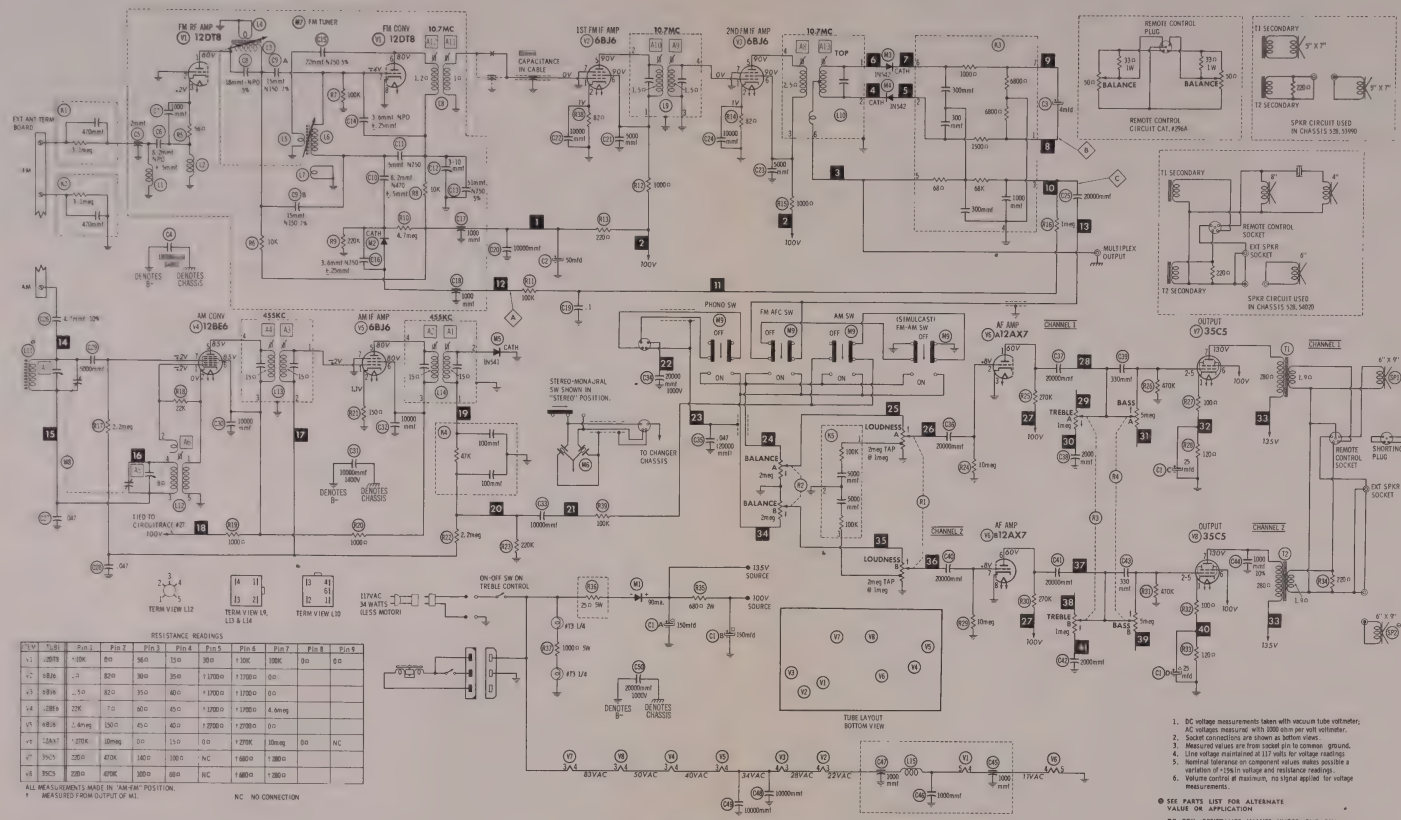
AUDIO PRINTED BOARD



RESISTANCE READINGS

TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12DT8	100K	0Ω	56Ω	15Ω	30Ω	100K	100K	0Ω	0Ω
V2	6BJ6	3Ω	82Ω	30Ω	35Ω	↑ 17000Ω	↑ 17000Ω	0Ω		
V3	6BJ6	3Ω	82Ω	35Ω	60Ω	↑ 17000Ω	↑ 17000Ω	0Ω		
V4	12BE6	22K	7Ω	60Ω	45Ω	↑ 17000Ω	↑ 17000Ω	4.6meg		
V5	6BJ6	2.4meg	150Ω	45Ω	40Ω	↑ 2700Ω	↑ 2700Ω	0Ω		
V6	12AX7	100K	10meg	0Ω	15Ω	0Ω	↑ 270K	10meg	0Ω	NC
V7	35C5	220Ω	470K	140Ω	100Ω	NC	↑ 680Ω	↑ 280Ω		
V8	35C5	220Ω	470K	100Ω	68Ω	NC	↑ 680Ω	↑ 280Ω		

ALL MEASUREMENTS MADE IN "AM-FM" POSITION.
↑ MEASURED FROM OUTPUT OF M1.

NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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SILVERTONE MODELS 1057, 1058, 1059, 1060, 1061, 1062
(Ch. 528.53990, 528.54010, 528.54020)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator.

Suggested Alignment Tools:

A1 Thru A4... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

A5, A7..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

A6, A8 Thru A10, A13.. GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

A11, A12..... GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547

AM ALIGNMENT—SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of AM Converter Low side to chassis.	455KC (400% AM Mod.)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1630KC	"	"	A5	"
3.	"	532KC	Tuning gang fully closed.	"	A6	Adjust for maximum output. Repeat Steps 2 and 3.
4.	Loop	1400KC	1400KC	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

Short Point (A) to chassis.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	Across FM antenna terminals.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point (B). Common to chassis.	A8, A9, A10, A11, A12	Adjust for maximum deflection.
6.	"	"	"	DC probe to point (C). Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

10.7MC

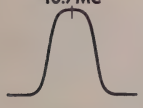


FIG. 1

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

Short point (A) to chassis.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	Across FM antenna terminals.	10.7MC (450KC Swp.)	(FM) Point of non-interference.	Vert. amp. to point (B). Low side to chassis.	A8, A9, A10, A11, A12	Disconnect stabilizing capacitor C3. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C3.
6.	"	"	"	Vert. amp. to point (C). Low side to chassis.	A13	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

10.7MC

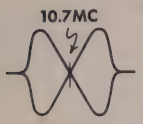
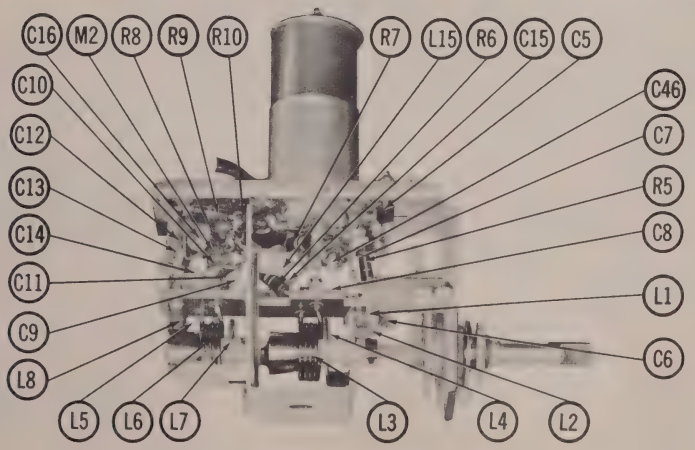


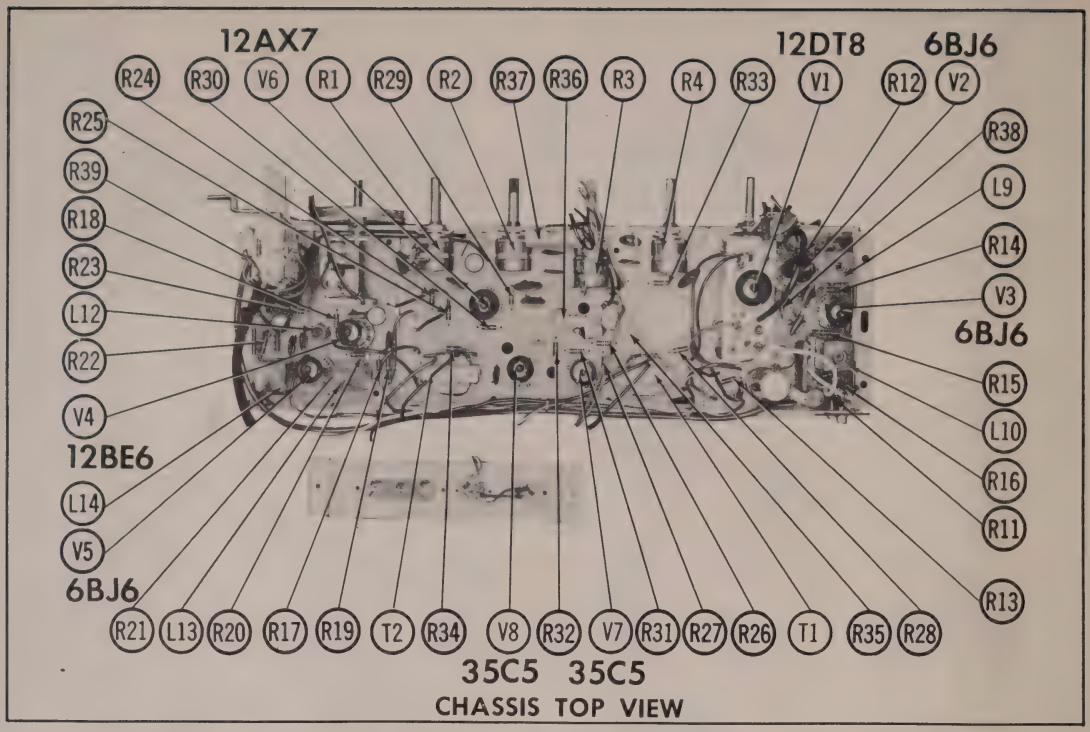
FIG. 2



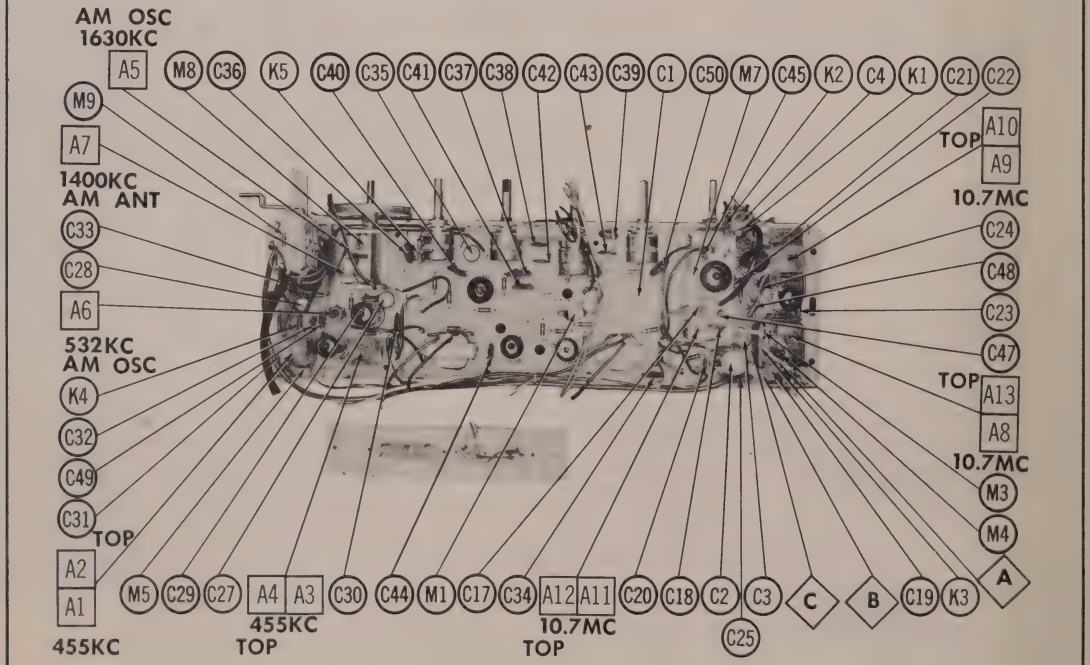
FM RF SUBCHASSIS

SILVERTONE MODELS 1057, 1058, 1059, 1060, 1061, 1062 (Ch. 528.53990, 528.54010, 528.54020)

FOLDER 12



CHASSIS TOP VIEW



CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC)	ITEM No.	USE	TYPE (RAYTHEON / SYLVANIA)
V1	FM RF Amp. - FM Conv.	12DT8	V6	Channel 1 AF Amp. - Channel 2 AF Amp.	12AX7
V2	1st FM IF Amplifier	6BJ6	V7	Channel 1 Output	35C5
V3	2nd FM IF Amplifier	6BJ6	V8	Channel 2 Output	35C5
V4	AM Converter	12BE6			
V5	AM IF Amplifier	6BJ6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲150	150	18-111-5						
B	■150	150							
C	25	25							
D	▲25	25							
C2	50	150	18-110-5						
C3	4	15	18-109-5	BCD15004	ECPB404	PET1935	MLV5-15	VL-1163	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	10000 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BK-S10
C5	2	#31B-176-07						
C6	8.2 NPO ± .5mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C7	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	18 NPO 5%			TCZ-18	C10Q18C		CNO-418	10TCC-Q18
C9A	15 N150 7%	#13L8PG150N2				*		10TCP-Q15
B	15 N150 7%					*		10TCP-Q15
C10	8.2 N470 ± .5mmf	#13L8TH8R2D				*		
C11	5 N750			DTN-4R7	C10V5U	CCTN-050	CN7-550	10TCU-V50
C12	3-10	#198-902-9		829-10				
C13	51 N750 5%			TCN-51	C10Q51U			
C14	3.6 NPO ± .25mmf		NPO-DI 3.3	DTZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V33
C15	22 N750 5%			DTN-22	C10Q22U		CN7-422	10TCU-Q22
C16	3.6 N750 ± .25mmf			TCN-3R3			CN7-533	10TCU-V33
C17	1000		EF-001	MFT-1000		CCF-102	CT280A	
C18	1000		EF-001	MFT-1000		CCF-102	CT280A	
C19	.1 200V		P2151N-1	DF-104	BC2P1J	2DP-3-104	ACE-401	2SE-P10
C20	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C26	4.7 10%		NPO-SI 4.7	TCZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C27	.047 400V		P4151N-047	DD-503	BC6S47J	4DP-3-473	ACE-6147	4SE-S47
C28	.047 400V		P4151N-047	DD-503	BC6S47J	4DP-3-473	ACE-6147	4SE-S47
C29	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C30	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C31	10000 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BL-S10
C32	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	20000 1000V		BPD-02		CUBI0S2	16DP-4-203	B-120	10TM-S20
C35	.047 400V	(20000) †	P415N-047	DD-503	BC6S47J	4DP-3-473	ACE-6147	4SE-S47
C36	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C37	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C38	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C39	330		BPD-00033	DD-331	L10T33	CCD-331	B-333	10TS-T33
C40	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C41	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C42	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C43	330		BPD-00033	DD-331	L10T33	CCD-331	B-333	10TS-T33
C44	1000 10%		D1-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C45	1000		EF-001	MFT-1000		CCF-102	CT280A	
C46	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C47	1000		EF-001	MFT-1000		CCF-102	CT280A	
C48	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C49	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C50	20000 1000V		DAC-27		CUBI0S2	16DP-4-203	B-120	10TM-S20

\# Silvertone Part Number.
† Alternate Value.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg 1meg Tap	½	24-402	BT-82				Loudness, Channel 1
B	2meg 1meg Tap	½		STR-82				Loudness, Channel 2
R2A	2meg	½	24-409					Balance, Channel 1
B	2meg	½						Balance, Channel 2
R3A	1meg	½	24-407	B-70	AD47-1meg-Z		FA16A	Treble, Channel 1
B	1meg	½		SR-70	Not Req.		RU16A	Treble, Channel 2
C	Shaft			Not Req.	FS-3		CS3500	
D	Switch			KR-1	SWE-12		Us41	Power Off-On
R4A	5meg	½	24-404				FD56R	Bass, Channel 1
B	5meg	½					RU56R	Bass, Channel 2
C	Shaft						CS3500	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	56Ω	
R6	10K	
R7	100K	
R8	10K	
R9	220K	
R10	4.7meg	
R11	100K	
R12	1000Ω	
R13	220Ω	
R14	82Ω	
R15	1000Ω	
R16	1meg	

ITEM No.	RATING	REMARKS
R17	2.2meg	
R18	22K	
R19	1000Ω	
R20	1000Ω	
R21	150Ω	
R22	2.2meg	
R23	220K	
R24	10meg	
R25	270K	
R26	470K	
R27	100Ω	
R28	120Ω	

ITEM No.	RATING	REMARKS
R29	10meg	
R30	270K	
R31	470K	
R32	100Ω	
R33	120Ω	
R34	220Ω	
R35	680Ω 2W	
R36	25Ω 3W	IRC#PW5-25Ω
R37	1000Ω 5W	IRC#PW5-1000Ω
R38	82Ω	
R39	100K	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SILVERTONE PART No.	REPLACEMENT DATA	
K1	FM Antenna Filter	470mmf, .3-1meg	Note 1	Centralab	RC-471
				Sprague	AC1-1
K2	FM Antenna Filter	470mmf, 3-1meg	Note 1	Centralab	RC-471
				Sprague	AC1-1
K3	Ratio Detector Comp.	(3) 300mmf, 1000mmf, 68Ω, 1000Ω, 1500Ω, (2) 6800Ω, 68K	13-45-3	Aerovox	PA-694
				Centralab	PC-342
				Sprague	C-12
K4	AM Diode RF Filter	100mmf, 100mmf, 47K	13-2-2	Aerovox	PA-97
				Centralab	PC-50
				Cornell-Dubilier	1111M1
				Sprague	D-1
K5	Loudness Comp.	(2) 5000mmf, (2) 100K	13-41-3		

Note 1. Some versions may use Component Combination of 1000mmf, 4.7meg (Part #13-17-3).

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		SILVERTONE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	RF Choke	34A-1002				
L2	Cathode Choke	34A-1002-01				
L3	FM RF	34A-1006				
L4	Inductance Adj.	31K-338-01				
L5	Feedback	28RI-34BONR-92				
L6	FM Osc.	34A-1006				
L7	Inductance Adj.	31K-338-01				
L8	1st FM IF Trans.	31U-619				
L9	2nd FM IF Trans.	10-135-2	FM-256	1463-PC	RTC-9046	
L10	Ratio Detector	10-33-0				
L11	Loopstick	82-172-0 *	BC-419	705-A		* Includes C26
L12	AM Osc.	10-55-4				
L13	1st AM IF Trans.	10-116-2	BC-356	13-PC1	RTC-8641	
L14	2nd AM IF Trans.	10-116-2	BC-357	13-PC2	RTC-8642	
L15	Fil. Choke	34A-575				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SILVERTONE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2500Ω	6-8Ω	80-133-1					
T2	2500Ω	6-8Ω	80-133-1					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SILVERTONE PART No.	QUAM PART No.	
SP1	6"x 9"	PM	6-8Ω	33-459-4A *	69A3Z8	* Models 1058, 1059, 1060 (Alternate Part #33-459-4)
SP2	6"x 9"	PM	6-8Ω	33-459-4A *	69A3Z8	‡ Models 1061, 1062
	6"	PM		33-467-4 ‡		† Model 1057
	8"	PM		33-466-4 ‡		
	4"	PM		33-465-4 ‡		
	5"x 7"	PM	6-8Ω	33-457-4 †	57A1Z8	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	SILVERTONE PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.090A	*	1N1763 *	K300 *	SR200 *	* Silicon Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		SILVERTONE PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2						AFC Diode
M3	1N542			1N295	1N295	FM Det. ⎫ Matched
M4	1N542			1N295	1N295	(Pigtail) ⎭ Pair
M5	1N541			1N60	1N60	AM Det. (Pigtail)

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	SILVERTONE PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M6	33-333-0	Not Req.	13TB	Not Req.	26S	S1-1 * & S3-3 *	10T2-S	Not Req.	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M7	Tuner	95-213-0	FM, Complete
M8	Tuning Cap.	19-90-2	AM, 2 Gang
M9	Switch	69-328-0	Selector (Pushbutton Type)
	Printed Board	84-11351-0	FM, Complete, Less Tubes
	Printed Board	25-26-1	FM, Board Only, Less All Components
	Printed Board	84-11350-0	AM, Complete, Less Tubes
	Printed Board	25-29-1	AM, Board Only, Less All Components
	Printed Board	84-11352-0	Amp, Complete, Less Tubes
	Printed Board	25-27-1	Amp, Board Only, Less All Components

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Scale	67-690-0	
Dial Pointer	52-242-1	
Dial Glass	48-174-1	
Knob	52-1397-0	AM, Tuning
Knob	52-1392-0	5 Used, Models 1061, 1062
Knob	52-1426-0	5 Used, Models 1058, 1059, 1060
Knob	52-1292-0	5 Used, Model 1057
Pushbutton	52-1356-0	4 Used
Cabinet	42-137-2	With Lid, Model 1057
Cabinet	42-138-3	Mahogany, Model 1058
Cabinet	42-139-3	Limed Oak, Model 1059
Cabinet	42-140-3	Walnut, Model 1060
Cabinet	42-145-3	Mahogany, Model 1061
Cabinet	42-146-3	Limed Oak, Model 1062
Cabinet	42-67-4	Speaker, Mahogany, Model 1061
Cabinet	42-68-4	Speaker, Limed Oak, Model 1062
Cabinet	42-52-4	Speaker, Mahogany, Model 1058
Cabinet	42-53-4	Speaker, Limed Oak, Model 1059
Cabinet	42-57-4	Speaker, Walnut, Model 1060
Leg	49-627	Mahogany, Model 1058
Leg	49-628	Limed Oak, Model 1059
Leg	49-629	Walnut, Model 1060
Leg	49-645	Mahogany, Model 1061
Leg	49-646	Limed Oak, Model 1062
Handle	49-630	With Hardware, Model 1057

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

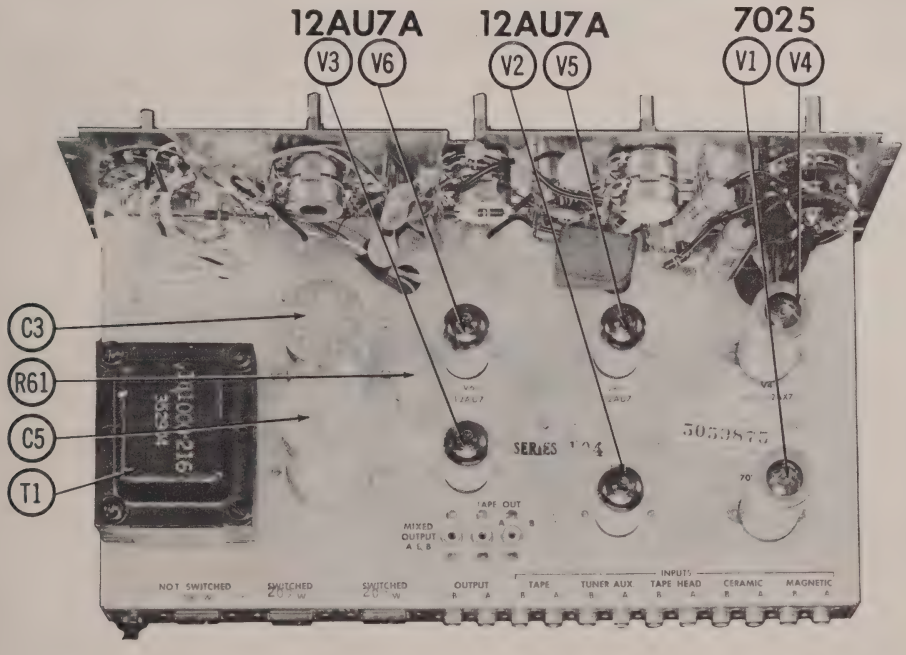
PHOTOFACT® Folder

STROMBERG-CARLSON MODEL ASE-434

STROMBERG-CARLSON
MODEL ASE-434

TRADE NAME	Stromberg-Carlson Model ASE-434
MANUFACTURER	Stromberg-Carlson Co., A Div. of General Dynamics Corp., Commercial Products Div., 1400 N. Goodman Street, Rochester 9, N. Y.
TYPE SET	AC Operated 6 Tube Stereo Preamplifier
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 39 Watts, .62 Amp. @ 117 Volts AC

STROMBERG-CARLSON
MODEL ASE-434



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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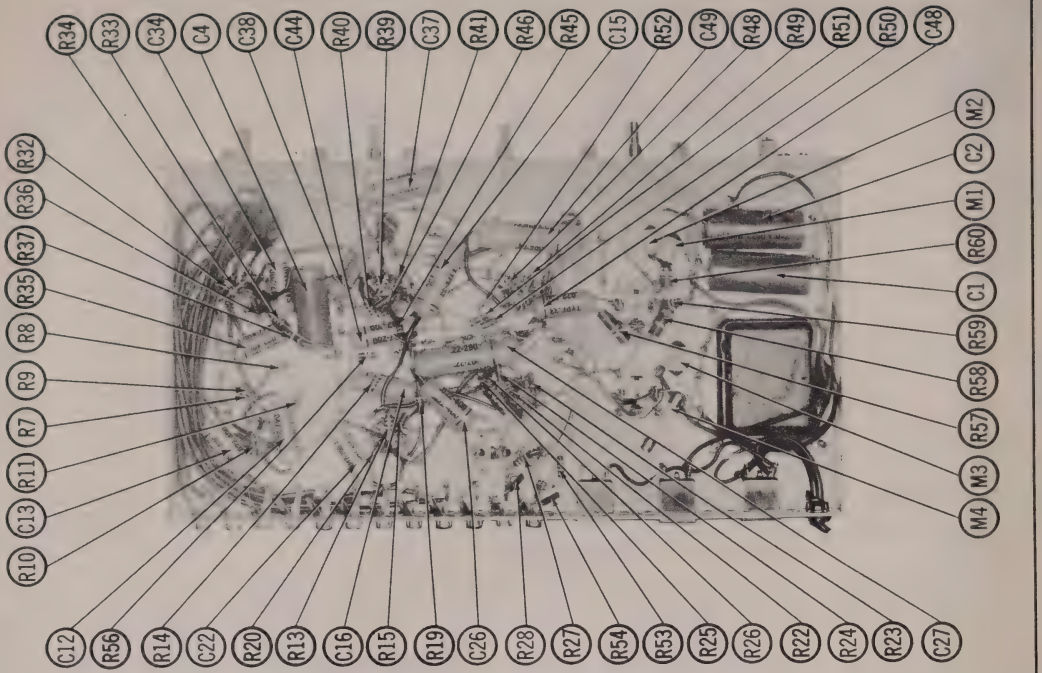
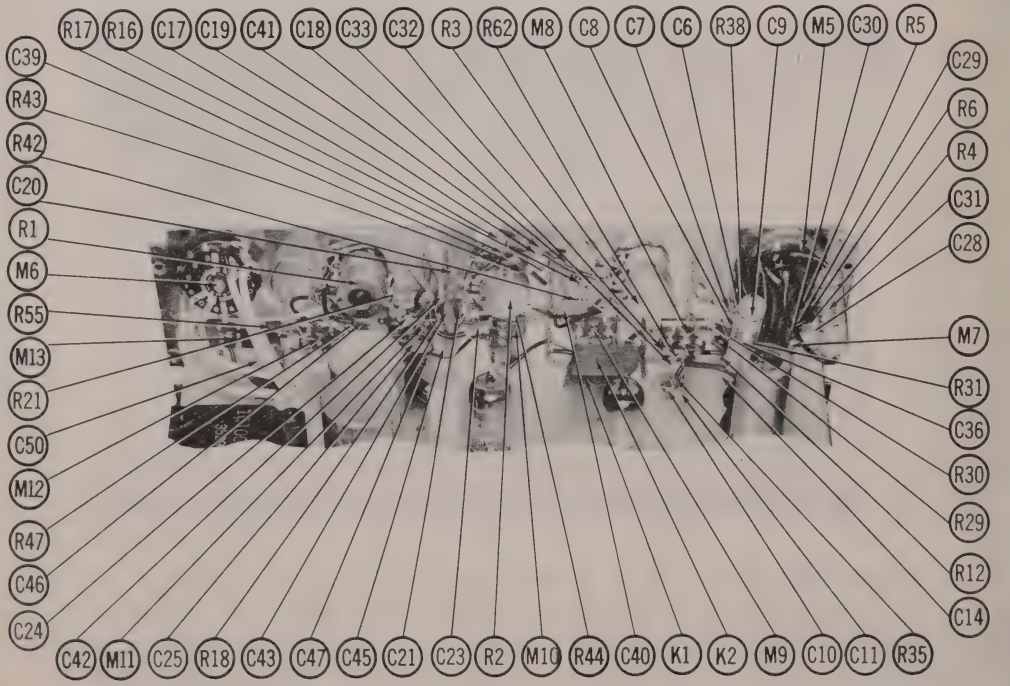
KU121

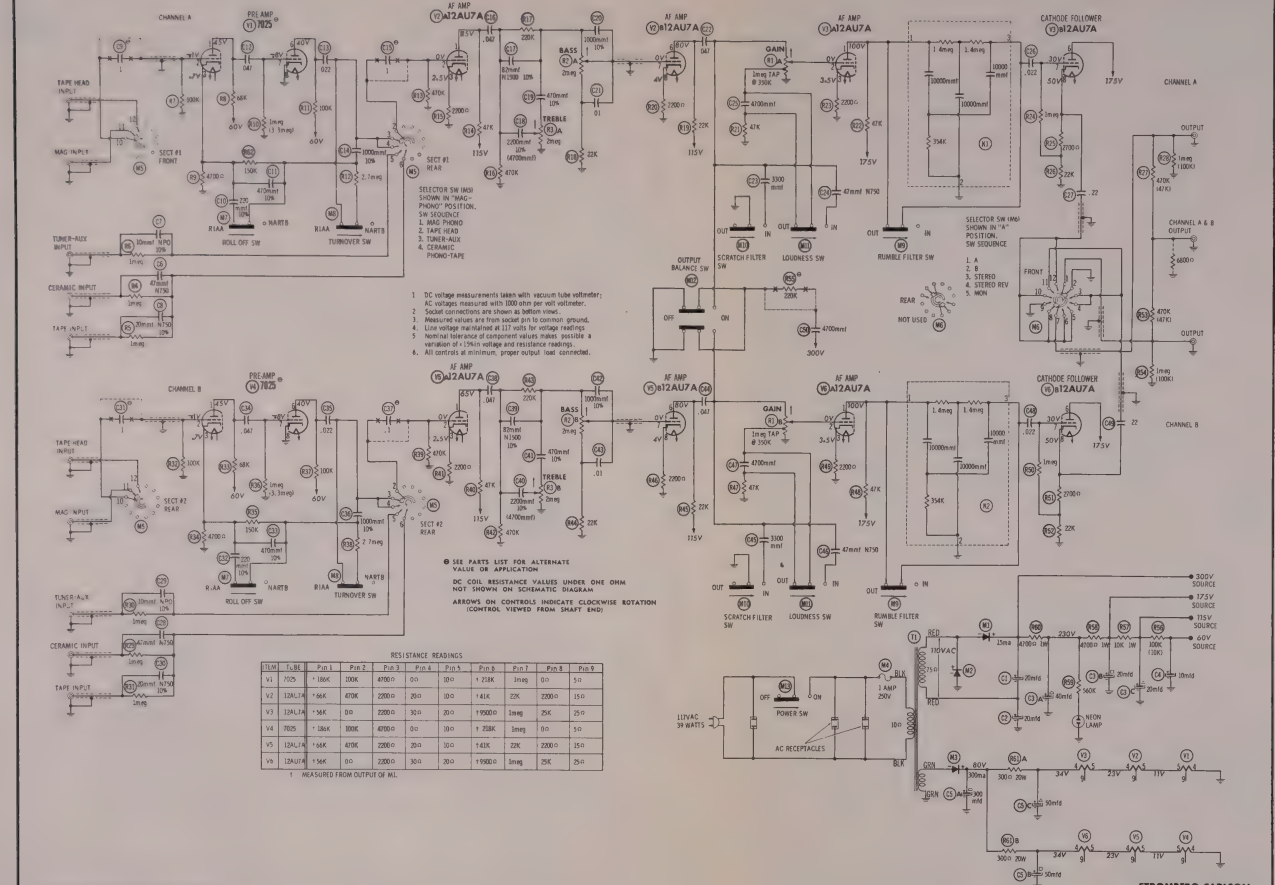
SET 517 FOLDER 13



CHASSIS-BOTTOM VIEW



CONTROL PANEL-REAR VIEW



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7025	* 186K	100K	47000	0.0	10.0	† 258K	1meg	0.0	5.0
V2	12AU7A	* 66K	470K	2200.0	29.0	10.0	† 41K	22K	2200.0	15.0
V3	12AU7A	* 56K	0.0	2200.0	30.0	20.0	† 9500.0	1meg	25K	25.0
V4	7025	* 186K	100K	47000	0.0	10.0	† 258K	1meg	0.0	5.0
V5	12AU7A	* 66K	470K	2200.0	29.0	10.0	† 41K	22K	2200.0	15.0
V6	12AU7A	* 56K	0.0	2200.0	30.0	20.0	† 9500.0	1meg	25K	25.0

1 MEASURED FROM OUTPUT OF M1.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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STROMBERG-CARLSON
MODEL ASE-434

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel A Preamp.	7025 (12AX7) *	V4	Channel B Preamp.	7025 (12AX7) *
V2	Channel A AF Amp.	12AU7A	V5	Channel B AF Amp.	12AU7A
V3	Channel A AF Amp. - Cathode Follower	12AU7A	V6	Channel B AF Amp. - Cathode Follower	12AU7A

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Stromberg-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	20	250	111000-027	PRS1570	BR2025	TC55	TD-20-250	TVA-1508	
C2	20	250	111000-027	PRS1570	BR2025	TC55	TD-20-250	TVA-1508	
C3A	▲40	350	111000-071	AFH3-50-05	C0330	FP396.1	TMT-3739	TVL-3784	
B	■20	350							
C	▲20	350							
C4	10	250	111106-000	PRS1620	BR1045	TC52	TD-10-250	TVA-1504	
C5A	▲300	100	111000-070	AFH4-01-40		FP240		TVL-2435	
B	■50	100				TC499		TVA-1425	
C	▲50	100							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C7	10 NPO 10%		NPO-SI 10	TCZ-10	C10QIC	CCTO-100	CNO-410	10TCC-Q10
C8	20 N750 10%		N750-DI 20	DTN-20	C10Q2U		CN7-420	10TCU-Q20
C9	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2DP-1-104	GEM-201	2TM-P10
C10	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C11	470 10%		DI-470	DD-471		CCD-471	GP347	10TS-T47
C12	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C13	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C14	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C15	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2DP-1-104	GEM-201	2TM-P10
C16	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C17	82 N1500 10%					*		
C18	2200 10%	(4700) †	DI-2200			CCD-222	GP222	10TS-D22

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C19	470 10%		DI-470	DD-471		CCD-471	GP347	10TS-T47
C20	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C21	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C22	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C23	3300		DI-3300	DD-332	BYA10D33	CCD-332	GP233	10TS-D33
C24	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C25	4700		DI-4700	DD-472	BYA10D47M	CCD-472	GP247	10TS-D47
C26	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C27	.22 200V		P288N-22		CUB2P22	2DP-4-224	GEM-2022	2TM-P22
C28	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C29	10 NPO 10%		NPO-SI 10	TCZ-10	C10QIC	CCTO-100	CNO-410	10TCC-Q10
C30	20 N750 10%		N750-DI 20	DTN-20	C10Q2U		CN7-420	10TCU-Q20
C31	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2DP-1-104	GEM-201	2TM-P10
C32	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C33	470 10%		DI-470	DD-471		CCD-471	GP347	10TS-T47
C34	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C35	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C36	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C37	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2DP-1-104	GEM-201	2TM-P10
C38	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C39	82 N1500 10%					*		
C40	2200 10%	(4700) †	DI-2200			CCD-222	GP222	10TS-D22
C41	470 10%		DI-470	DD-471		CCD-471	GP347	10TS-T47
C42	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C43	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C44	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C45	3300		DI-3300	DD-332	BYA10D33	CCD-332	GP233	10TS-D33
C46	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C47	4700		DI-4700	DD-472	BYA10D47M	CCD-472	GP247	10TS-D47
C48	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C49	.22 200V		P288N-22		CUB2P22	2DP-4-224	GEM-2022	2TM-P22
C50	4700		DI-4700	DD-472	BYA10D47M	CCD-472	GP247	10TS-D47

Note 1. Not used in some versions.
† Alternate Value.
* Not normally found in distributor's stock. Available thru distributor on order to manufacturer.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Stromberg-Carlson PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg		145000-077					Gain, Channel A
	350K Tap							
B	1meg							Gain, Channel B
	350K Tap							
R2A	2meg		145000-078	F1-68		†QJ-1289R	■ UE4181	Bass, Channel A
B	2meg			R2-68				Bass, Channel B
R3A	2meg		145000-078	F1-68		†QJ-1289R	■ UE4181	Treble, Channel A
B	2meg			R2-68				Treble, Channel B

† "CONCENTRIKIT" Equivalent: K-15 Kit with base elements & shafts: B13-139, P14-019 (Panel)
(Not available as a factory assembled unit). B13-139, R1-028 (Rear)
■ "STA-LOC" equivalent: FA26A, RU26A, OS562A, IS1000.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	1meg	
R5	1meg	
R6	1meg	
R7	100K	
R8	68K	
R9	4700Ω	
R10	1meg	(3.3meg) *
R11	100K	
R12	2.7meg	
R13	470K	
R14	47K	
R15	2200Ω	
R16	470K	
R17	220K	
R18	22K	
R19	22K	
R20	2200Ω	
R21	47K	
R22	47K	
R23	2200Ω	
R24	1meg	

ITEM No.	RATING	REMARKS
R25	2700Ω	
R26	22K	
R27	470K	(47K) *
R28	1meg	(100K) *
R29	1meg	
R30	1meg	
R31	1meg	
R32	100K	
R33	68K	
R34	4700Ω	
R35	150K	
R36	1meg	(3.3meg) *
R37	100K	
R38	2.7meg	
R39	470K	
R40	47K	
R41	2200Ω	
R42	470K	
R43	220K	
R44	22K	
R45	22K	

ITEM No.	RATING	REMARKS
R46	2200Ω	
R47	47K	
R48	47K	
R49	2200Ω	
R50	1meg	
R51	2700Ω	
R52	22K	
R53	470K	(47K) *
R54	1meg	(100K) *
R55	220K	Note 1
R56	100K	(10K) *
R57	10K 1W	
R58	4700Ω 1W	
R59	560K	
R60	4700Ω 1W	
R61A	300Ω 20W	#149000-024
B	300Ω 20W	
R62	150K	

Stromberg-Carlson Part Number.
* Alternate Value.
Note 1. Not used in some versions.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Stromberg-Carlson PART No.	REPLACEMENT DATA
K1	Rumble Filter Channel A	10000mmf, 10000mmf, 10000mmf, 354K, 1.4meg, 1.4meg	179000-034	Centralab PC-402
K2	Rumble Filter Channel B	10000mmf, 10000mmf, 10000mmf, 354K, 1.4meg, 1.4meg	179000-034	Centralab PC-402

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Stromberg Carlson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .62A	110V @ .055A AC	70V @ .300A DC	161000-216					

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	Stromberg-Carlson PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.015A	162000-011 *	1N1763 *	60K *	SR500 *	* Silicon Type
M2	.015A	162000-011 *	1N1763 *	60K *	SR500 *	
M3	.300A	162000-011 *	1N1763 *	60K *	SR500 *	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Stromberg-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M4	3AG	1A 250V P/T	555020-319		318001 (3AG 1A 250V P/T)		GJV-1	

MISCELLANEOUS

ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M5	Switch	158000-126	Function Selector (Rotary Wafer Type)
M6	Switch	158000-141	Channel Selector (Rotary Wafer Type)
M7	Switch	158000-058	Equalization (Turnover) (DPDT Slide Type)
M8	Switch	158000-058	Equalization (Roll-off) (DPDT Slide Type)
M9	Switch	158000-058	Rumble Filter (DPDT Slide Type)
M10	Switch	158000-058	Scratch Filter (DPDT Slide Type)
M11	Switch	158000-058	Loudness (DPDT Slide Type)
M12	Switch	158000-058	Output Balance (DPDT Slide Type)
M13	Switch	158000-055	Power Off-On (SPDT Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

**SYMPHONIC
MODEL 1510**

SYMPHONIC
MODEL 1510

SYMPHONIC
MODEL 1510

TRADE NAME	Symphonic Model 1510
MANUFACTURER	Symphonic Radio & Electronics, 235 Jersey Ave., New Brunswick, N. J.
TYPE SET	AC Operated AM Receiver With 4-Speed Manual Record Player
POWER SUPPLY	110 — 120 Volts AC, 60 Cycles RATING 27 Watts, .26 Amp. @117 Volts AC (Less Motor)
TUNING RANGE—BROADCAST	540 — 1600KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2....GENERAL CEMENT #5097, 8727
WALSCO #2515
A3, A4.... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 1 (grid) of Converter. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output.
2.	Loop	1600KC	1600KC	"	A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	1400KC Signal.	"	A4	Adjust for maximum output while rocking tuning gang.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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KP153

SET 517 FOLDER 14

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12AU6	V3	Output	50C5
V2	Det.-AF Amp.	12AV6	V4	Rectifier	35W4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	SYMPHONIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	CE101	PRS3800	BBRT84215	TCT3119	TDLT-7	TVA-3455	
B	40	150							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	5GA-T10
C3	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C4	.05 400V		P488N-05	DD-503	CUB4S5	4DP-4-503	GEM-415	4TM-S50
C5	.05 400V		P488N-05	DD-503	CUB4S5	4DP-4-503	GEM-415	4TM-S50

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SYMPHONIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K	1/2	VC-139	B-60-S	A47-500K-S	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	2.2meg	
R3	33K	

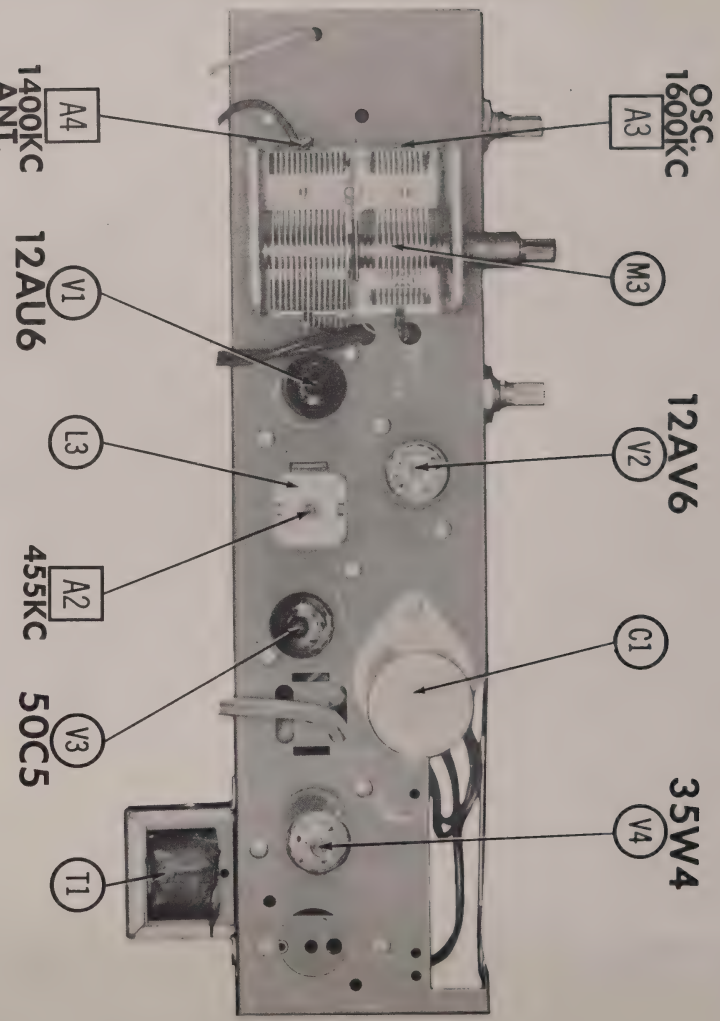
ITEM No.	RATING	REMARKS
R4	270K	
R5	150Ω	

ITEM No.	RATING	REMARKS
R6	1000Ω	
R7	22Ω 1W	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SYMPHONIC PART No.	REPLACEMENT DATA
K1	Audio Coupling	220mmf, 250mmf, 2000mmf, 5000mmf, 470K, 470K, 6.8meg	PC-150	Aerovox PA-113-1 Centralab PC-150 Cornell-Dubilier 116TM1 Mallory MS-106 Sprague DT-1

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		SYMPHONIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1 L2 L3	Loopstick Osc. Coil IF Trans.	AL-100 LO-100 IF-102	BC-419	705-A		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SYMPHONIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2000Ω	3-4Ω	TR-109	A-3025	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SYMPHONIC PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	SP401	4A1	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	SYMPHONIC PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M1 & M2	TO-45		420-TS-TB KR-314-TA	N8-1 * & N8-3 *	46T				

▲ Tone arm complete with cartridge and needles.

MISCELLANEOUS

ITEM No.	PART NAME	SYMPHONIC PART No.	NOTES
M3	Tuning Cap.	CV106	2 Gang (Ant. 21—484mmf, Osc. 8—160mmf)
M4	Switch	SW109	Radio-Phono (Rotary Wafer Type)
M5	Motor	MO111	4 Speed, 117 Volts With Switch

CABINETS & CABINET PARTS

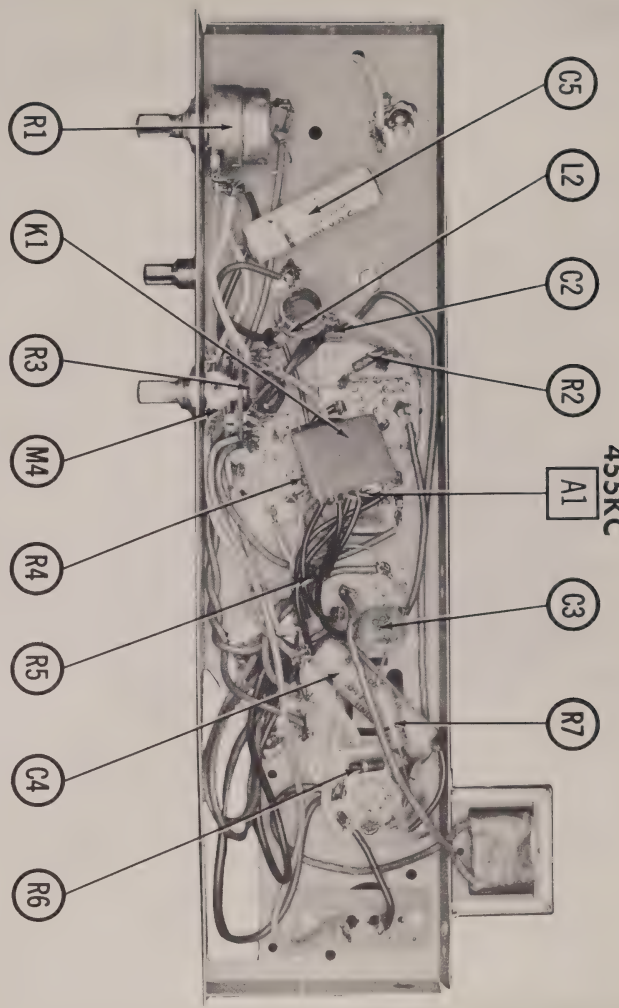
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

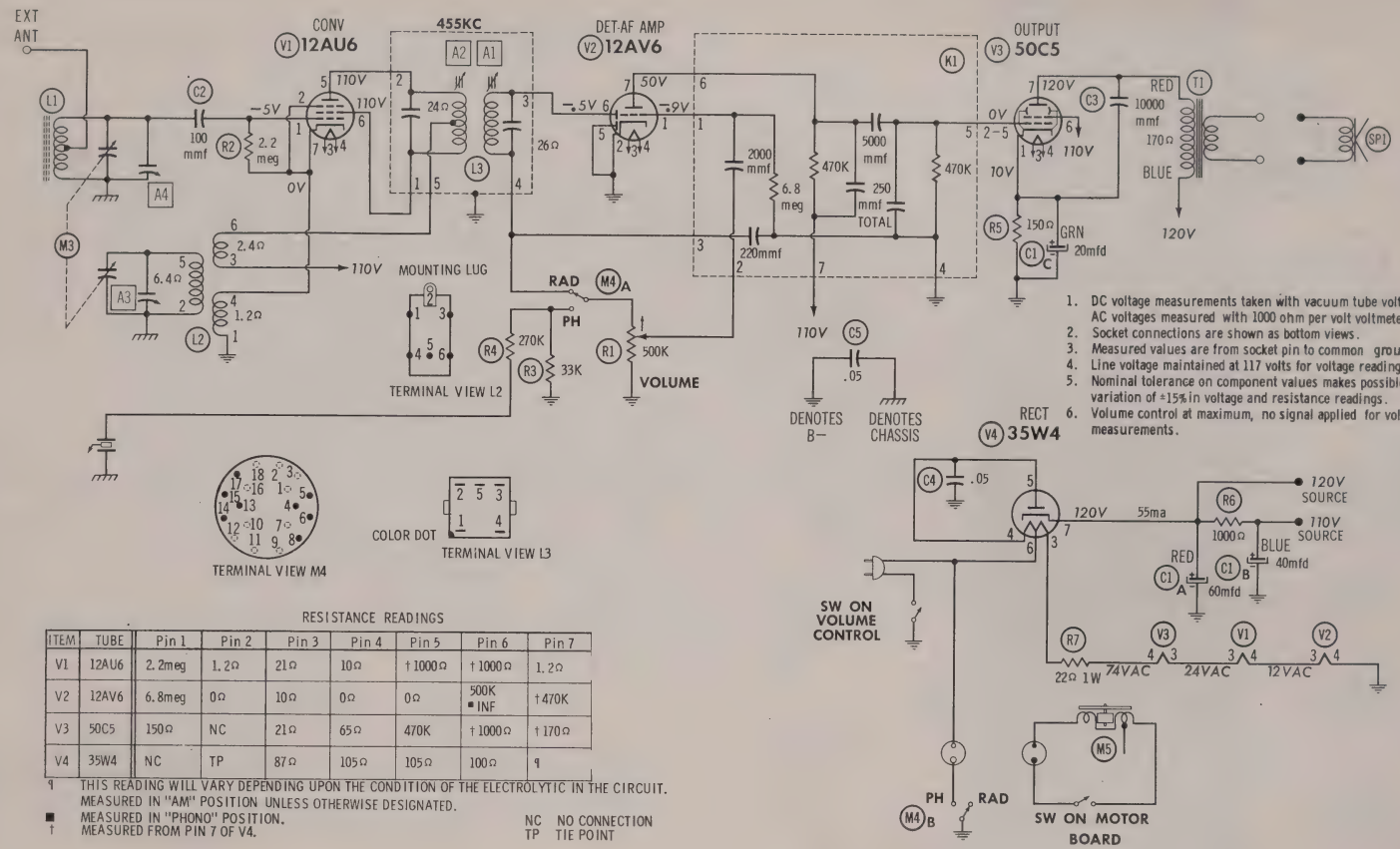
NAME	PART NO.	DESCRIPTION
Knob	KN317	White, Tuning, Calibrated
Knob	KN318	White, Function
Knob	KN341	White, Volume

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AU6	2.2meg	1.2Ω	21Ω	10Ω	†1000Ω	†1000Ω	1.2Ω
V2	12AV6	6.8meg	0Ω	10Ω	0Ω	0Ω	500K ■ INF	†470K
V3	50C5	150Ω	NC	21Ω	65Ω	470K	†1000Ω	†170Ω
V4	35W4	NC	TP	87Ω	105Ω	105Ω	100Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT. MEASURED IN "AM" POSITION UNLESS OTHERWISE DESIGNATED.
■ MEASURED IN "PHONO" POSITION.
† MEASURED FROM PIN 7 OF V4.

NC NO CONNECTION
TP TIE POINT

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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SYMPHONIC MODEL 1510

PHOTOFACT® Folder with CIRCUITRACE®

WEBCOR MODELS 1096-1, 1097-1, 1098-1, 4003-1, 4004-1 (Ch. 14X320-1, 14X323-1, 14X324-4, 73X015-1)

WEBCOR MODELS 1096-1, 1097-1, 1098-1, 4003-1, 4004-1 (Ch. 14X320-1, 14X323-1, 14X324-4, 73X015-1)

MODEL WC1098-1

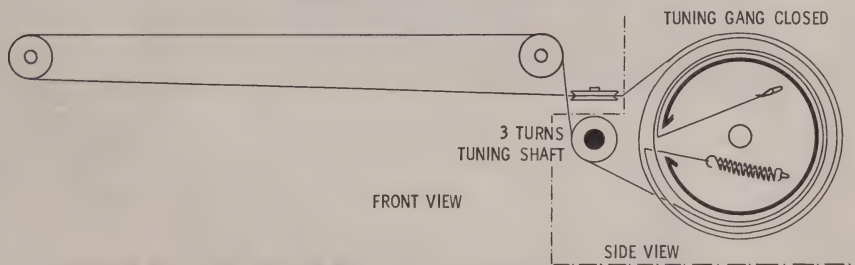
WEBCOR MODELS 1096-1, 1097-1, 1098-1, 4003-1, 4004-1 (Ch. 14X320-1, 14X323-1, 14X324-4, 73X015-1)

TRADE NAME	Webcor Models	BC1098-1, EC1096-1, EC1098-1, MC1096-1, MC1098-1, PC1097-1, WC1097-1 WC1098-1 (Tuner Ch. 73X015-1, Preamp. Ch. 14X324-4 Part of Channel 1 Amp. Ch. 14X323-1, Channel 2 Amp. Ch. 14X320-1), BC4003-1, EC4003-1, EC4004-1, MC4003-1, MC4004-1, PC4004-1, WC4003-1, WC4004-1 (External Speaker Unit)
MANUFACTURER	Webcor, Inc., 5610 W. Bloomingdale Ave., Chicago 39, Illinois	
TYPE SET	AC Operated 7 Tube FM-AM Tuner, 2 Tube Stereo Preamplifier, (2) 4 Tube Amplifiers, and 4-Speed Automatic Record Changer	
POWER SUPPLY	105 — 120 Volts AC, 60 Cycles	RATING 160 Watts, 1.5 Amp. @ 117 Volts AC (Complete, Less Motor) 100 Watts, .9 Amp. @ 117 Volts AC (Tuner and Amp.) 60 Watts, .6 Amp. @ 117 Volts AC (Auxiliary Amp. Only)
FREQ. RANGES — BROADCAST	535 — 1620KC	FREQ. MOD. 88 — 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER — SEE WEBCOR 172 — PHOTOFACT SET 447 FOLDER 13 OR RECORD CHANGER MANUAL RC-12

RECORD CHANGER E172-5 USED IN MODELS EC1096-1, EC1098-1. RECORD CHANGER T172-5 USED IN MODELS BC1098-1, MC1096-1, MC1098-1, PC1097-1, WC1097-1, WC1098-1

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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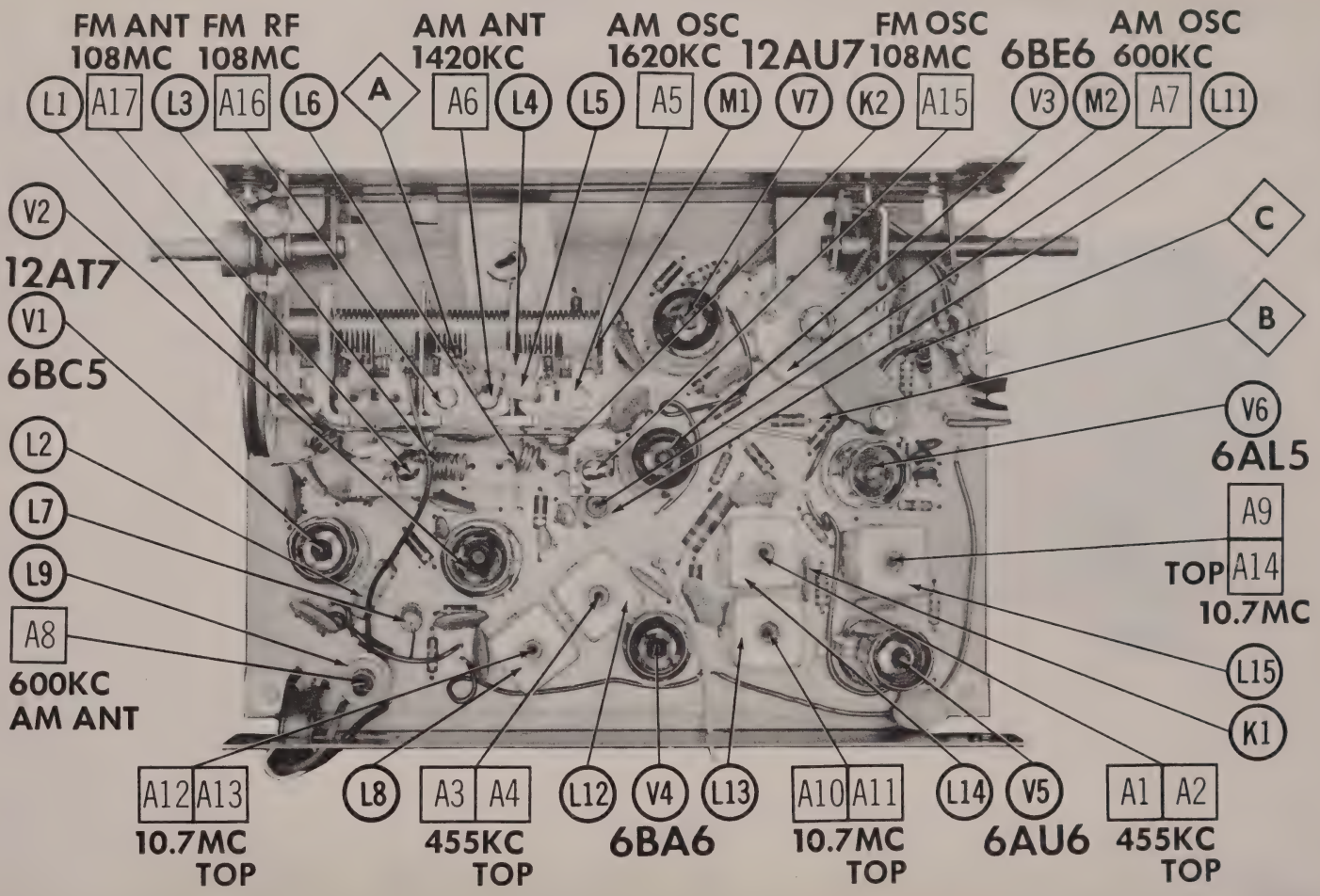
SET 517 FOLDER 15



TUNER CHASSIS-TOP VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Audio Level Control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 Thru A4 and A7 Thru A14...GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A5, A6, A15, A16, A17.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

AM ALIGNMENT—SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .05mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (400∿ Mod.)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1420KC	1420KC Signal.	"	A6	"
4.	"	600KC	600KC Signal.	"	A7, A8	Adjust for maximum output. Repeat Steps 3 and 4.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	High side thru .001mfd to point Ⓐ. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe thru 1meg to point Ⓑ. Common to chassis.	A9, A10, A11, A12, A13	Adjust for maximum deflection.
6.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	High side thru .001mfd to point Ⓐ. Common to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. thru 47K to point Ⓑ. Low side to chassis.	A9, A10, A11, A12, A13	Disconnect Stabilizing Capacitor C1. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C1.
6.	"	"	"	Vert. amp. to point Ⓒ. Low side to chassis.	A14	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A9 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	Across FM antenna terminals with 240Ω in high side.	108MC (Unmod.)	(FM) 108MC	DC probe thru 1meg to point Ⓑ. Common to chassis.	A15, A16, A17	Adjust for maximum deflection.
8.	"	88MC	88MC	"	L6, L3, L1	Adjust for maximum deflection by expanding or compressing coil turns.

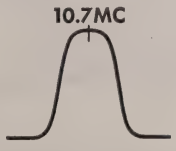


FIG. 1

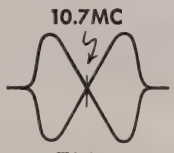
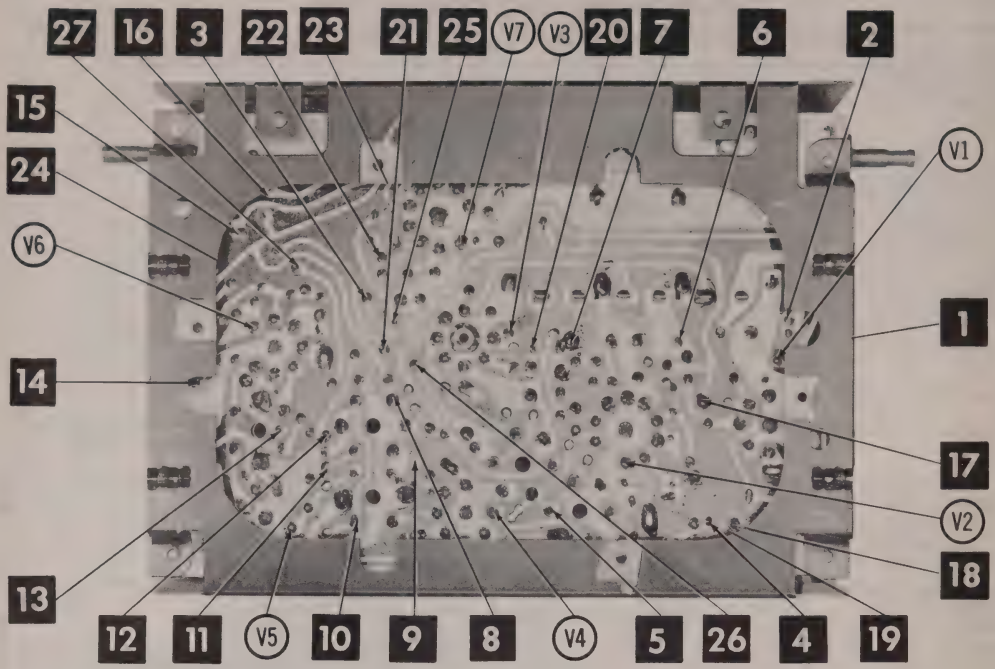


FIG. 2



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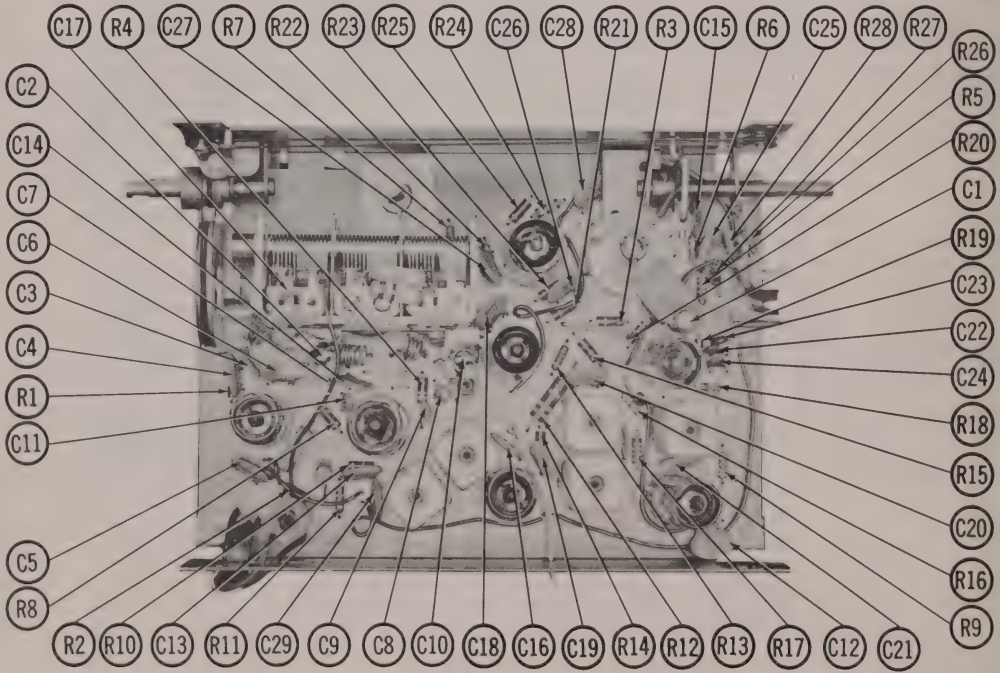
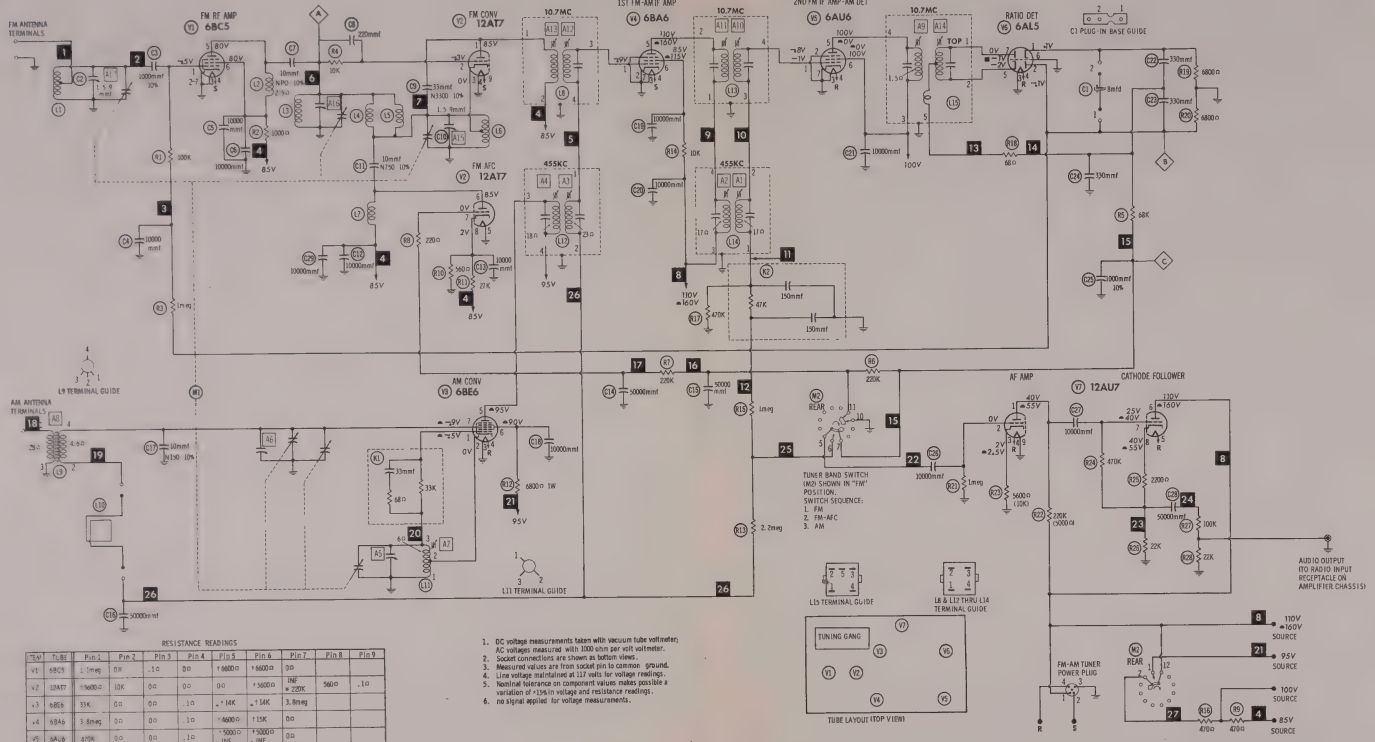
TUNER PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



TUNER CHASSIS TOP VIEW-CAPACITOR & RESITOR IDENT.


FM ANTENNA TERMINALS
FM RF AMP V1 6BC5
FM CONV V5 12AT7
1ST FM-AM IF AMP V4 6BA6
2ND FM IF AMP-AM DET V6 6AU6
RATIO DET V8 6AL5
FM AFC V2 12AT7
AM CONV V3 6BE6
AF AMP V7 12AU7
CATHODE FOLLOWER
10.7MC
455KC
L9 TERMINAL GUIDE
AM ANTENNA TERMINALS
L11 TERMINAL GUIDE
L13 TERMINAL GUIDE
L8 & L12 THRU L14 TERMINAL GUIDE
C1 PLUG-IN BASE GUIDE
TUNER BAND SWITCH (M2) SHOWN IN "FM" POSITION; SWITCH SEQUENCE: 1. FM 2. FM-AFC 3. AM
TUNING GANG
TUBE LAYOUT (TOP VIEW)
FM-AM TUNER POWER PLUG
AUDIO OUTPUT (TO RADIO INPUT RECEPTACLE ON AMPLIFIER CHASSIS)
110V 160V SOURCE
95V SOURCE
100V SOURCE
85V SOURCE

RESISTANCE READINGS

TSW	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
v1	6BC5	1.1meg	0Ω	.1Ω	0Ω	†660Ω	†660Ω	0Ω		
v2	12AT7	†6600Ω	10K	0Ω	0Ω	0Ω	†5600Ω	INF ▪ 220K	560Ω	.1Ω
v3	6BE6	33K	0Ω	0Ω	.1Ω	▪ 14K	▪ 14K	3.8meg		
v4	6BA6	3.8meg	0Ω	0Ω	.1Ω	†660Ω	†15K	0Ω		
v5	6AU6	615K	0Ω	0Ω	.1Ω	†5000Ω ▪ INF	▪ 5000Ω ▪ INF	0Ω		
v6	6AL5	6800Ω	6800Ω	0Ω	.1Ω	INF ▪ 300K	0Ω	INF ▪ 300K		
v7	12AU7	†220K	1meg	5600Ω	.1Ω	.1Ω	†660Ω	500K	24K	0Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
▪ MEASURED IN "AM" POSITION. ■ MEASURED IN "FM-AFC" POSITION.
† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
↑ MEASURED FROM PIN 2 OF V3. NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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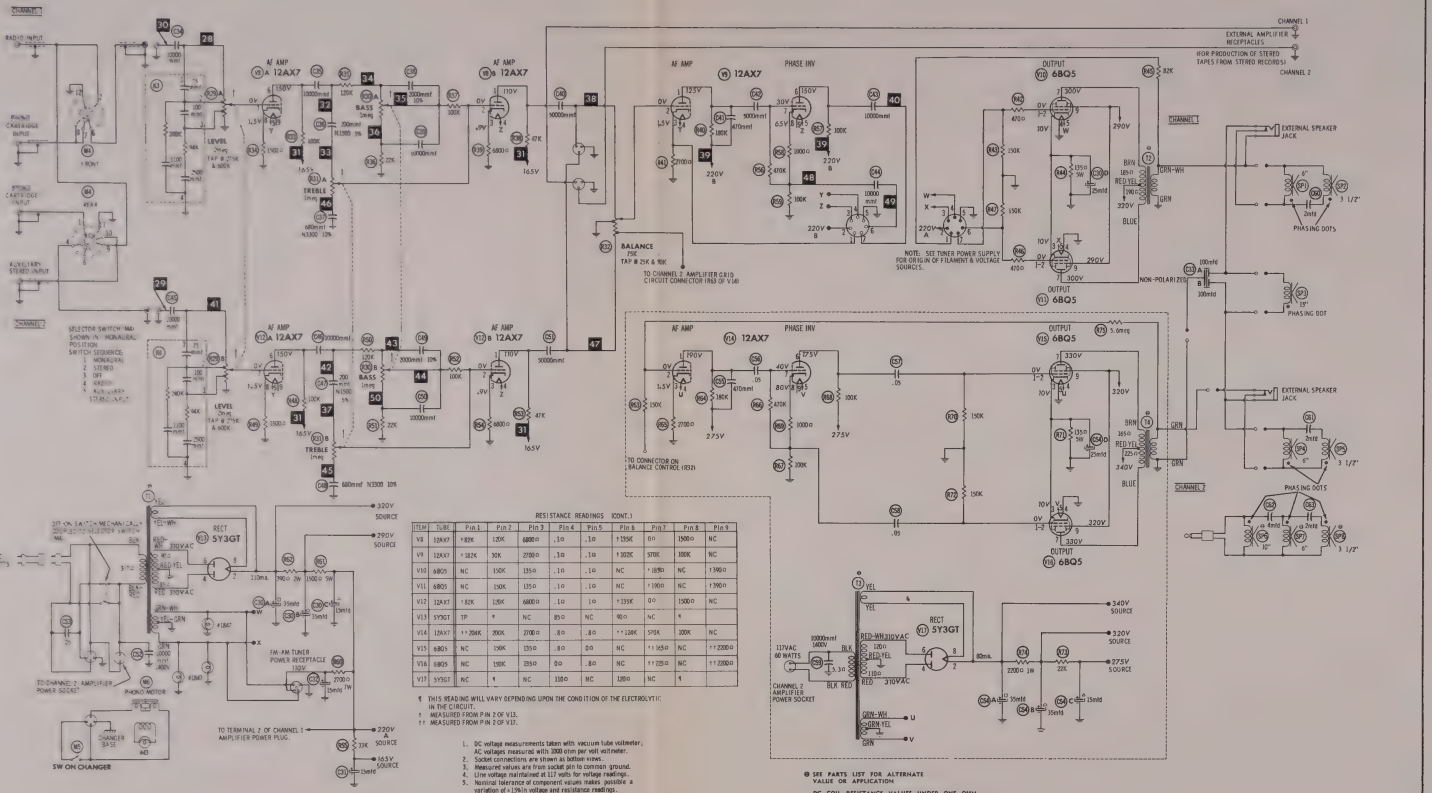
WEBCOR MODELS 1096-1, 1097-1, 1098-1, 4003-1, 4004-1 (Ch. 14X320-1, 14X323-1, 14X324-4,73X015-1)



RESISTANCE READINGS (CONT.)

CLIP	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V9	12AX7	†82K	120K	68000	.10	.10	†135K	0Ω	1500Ω	NC
V10	6BQ5	NC	150K	135Ω	.10	.10	NC	†185Ω	NC	†390Ω
V11	6BQ5	NC	150K	135Ω	.10	.10	NC	†190Ω	NC	†390Ω
V12	12AX7	†82K	120K	68000	.10	.10	†135K	0Ω	1500Ω	NC
V13	5Y3GT	TP	¶	NC	85Ω	NC	90Ω	NC	¶	
V14	12AX7	††204K	200K	27000	.80	.80	††124K	570K	100K	NC
V15	6BQ5	NC	150K	135Ω	.80	0Ω	NC	††165Ω	NC	††22000
V16	6BQ5	NC	150K	135Ω	0Ω	.80	NC	††225Ω	NC	††22000
V17	5Y3GT	NC	¶	NC	110Ω	NC	120Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM P.IN 2 OF V13.
†† MEASURED FROM P.IN 2 OF V17.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. AC voltages measured with 1000 ohm per volt voltmeter.
3. Socket connections are shown as bottom views.
4. Measured values are from socket pin to common ground.
5. Line voltage maintained at 117 volts for voltage readings.
6. Nominal tolerance of component values makes possible a variation of ±12% in voltage and resistance readings.
7. All controls at minimum, proper output load connected.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
for CHEVROLET

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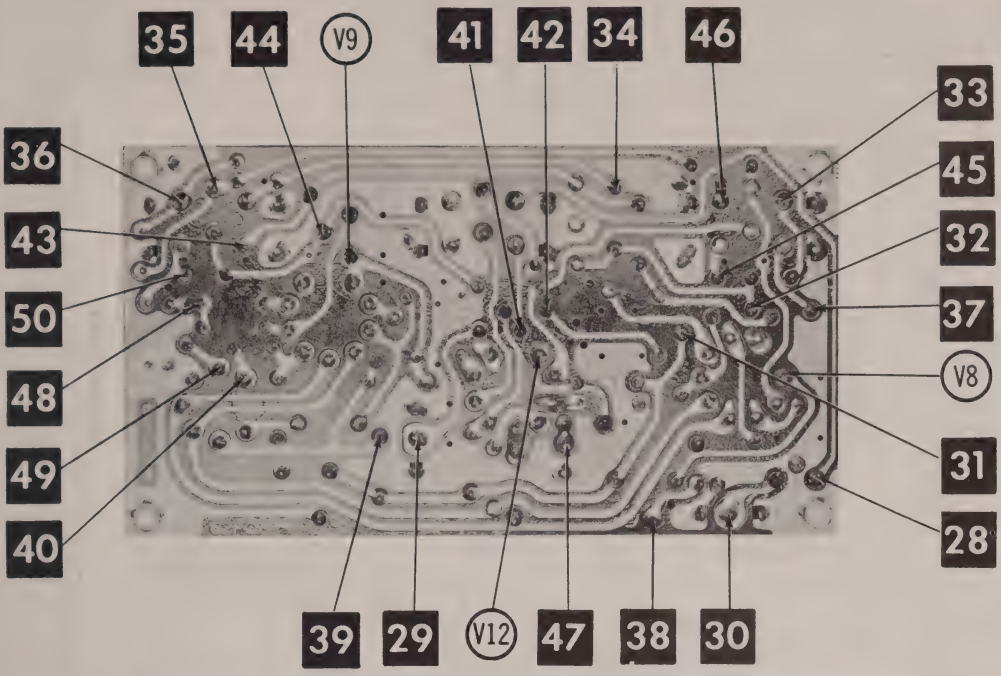
WEBCOR MODELS 1096-1, 1097-1, 1098-1, 4003-1, 4004-1 (Ch. 14X320-1, 14X323-1, 14X324-4, 73X015-1)



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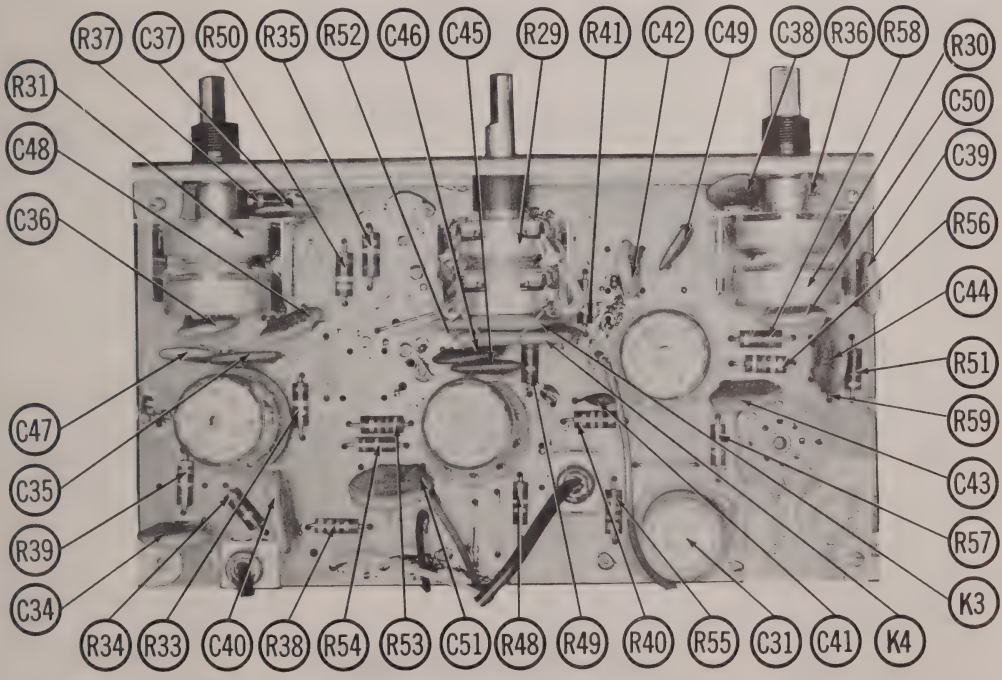
AMP PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



AMP PRINTED BOARD-TOP VIEW

TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	FM RF Amplifier	6BC5
V2	FM Converter-AFC	12AT7
V3	AM Converter	6BE6
V4	1st FM - AM IF Amp.	6BA6
V5	2nd FM IF Amp. -AM Det.	6AU6
V6	Ratio Detector	6AL5
V7	AF Amp. -Cathode Foll.	12AU7

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA WEBCOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	8	25	30P314	BCD-25008	NLW8-100	PET1760	MLV10-25	TE-1203.5	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	1.5-9	#30P326		829-10				
C3	1000 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	10 NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C8	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C9	33 N3300 10%	#30P338				*		
C10	1.5-9	#30P337		829-10				
C11	10 N750 10%		N750-DI 10	DTN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C12	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	50000		BPD-05	DD-503	CUB2S5	DP-2-503	GP150	5HK-S50
C15	50000		BPD-05	DD-503	CUB2S5	DP-2-503	GP150	5HK-S50
C16	50000		BPD-05	DD-503	CUB2S5	DP-2-503	GP150	5HK-S50
C17	10 N150 10%	#30P328				*		10TCP-Q10
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C20	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C23	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C24	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C25	1000 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	50000		BPD-05	DD-503	CUB2S5	DP-2-503	GP150	5HK-S50
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
\# Webcor Part Number.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R1	100K	
R2	1000Ω	
R3	1meg	
R4	10K	
R5	68K	
R6	220K	
R7	220K	
R8	220Ω	
R9	470Ω	
R10	560Ω	

ITEM No.	RATING	REMARKS
R11	27K	
R12	6800Ω 1W	
R13	2.2meg	
R14	10K	
R15	1meg	
R16	470Ω	
R17	470K	
R18	68Ω	
R19	6800Ω	
R20	6800Ω	

ITEM No.	RATING	REMARKS
R21	1meg	
R22	220K	(5000Ω) *
R23	5600Ω	(10K) *
R24	470K	
R25	2200Ω	
R26	22K	
R27	100K	
R28	22K	

* Alternate Value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	WEBCOR PART No.	REPLACEMENT DATA
K1	AM Osc. Grid	33mmf, 68Ω, 33K	62P023	
K2	Diode Filter	150mmf, 150mmf, 47K	62P018	Aerovox PA-98 Centralab PC-51 Cornell-Dubilier 111TM2 Sprague D-2

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA WEBCOR PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	FM Ant. Coil	11X1977				① IRC Part #CLA
L2	RF Choke(3.3uh)	66P025 ①	BC-564	4608	RTC-8518	
L3	FM RF Coil	66P027				
L4	RF Choke(.68uh)	66P023 ①	BC-560	4590	RTC-8514	
L5	RF Choke(1uh)	66P024 ①	BC-561	4602	RTC-8515	
L6	FM Osc. Coil	11X1969				
L7	RF Choke(1uh)	66P024 ①	BC-561	4602	RTC-8515	
L8	1st FM IF Trans.	69P018	FM-256	1463-PC	RTC-9046	
L9	AM Ant. Trans.	65P148				
L10	Loop Ant.					
L11	AM Osc. Coil	65P149				
L12	1st AM IF Trans.	69P020	BC-356	13-PC1	RTC-8641	
L13	2nd FM IF Trans.	69P019	FM-256	1463-PC	RTC-9046	
L14	2nd AM IF Trans.	69P021	BC-357	13-PC2	RTC-8642	
L15	Ratio Det.	69P017	FM-257	1465-PC	RTC-9053	

MISCELLANEOUS

ITEM No.	PART NAME	WEBCOR PART No.	NOTES
M1	Tuning Cap	11X2064	3 Gang
M2	Switch	32P123	FM-FM-AFC-AM (Rotary Wafer Type)
	Selector Lever and hub assembly	11X1884	

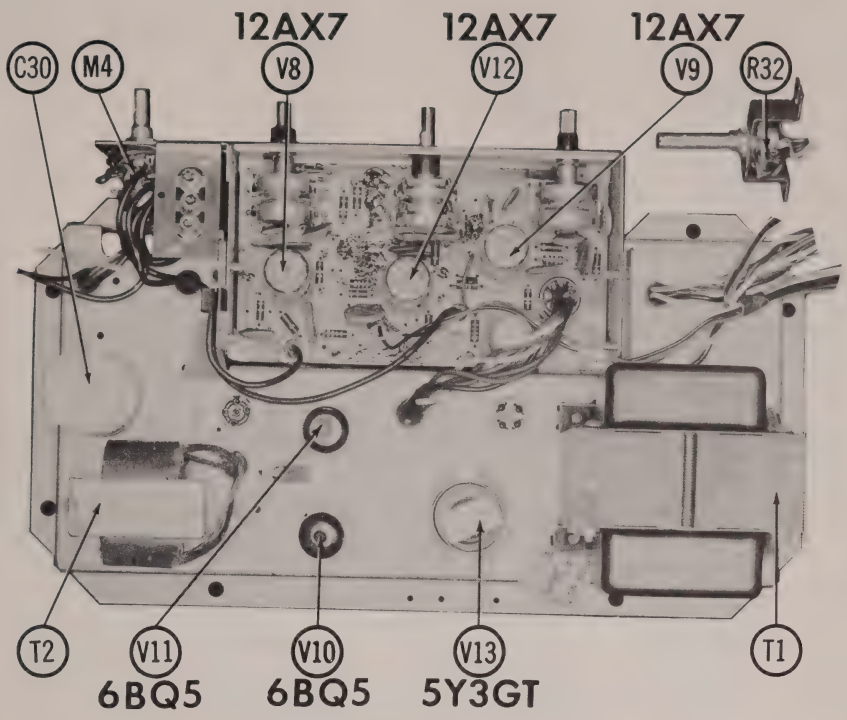
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

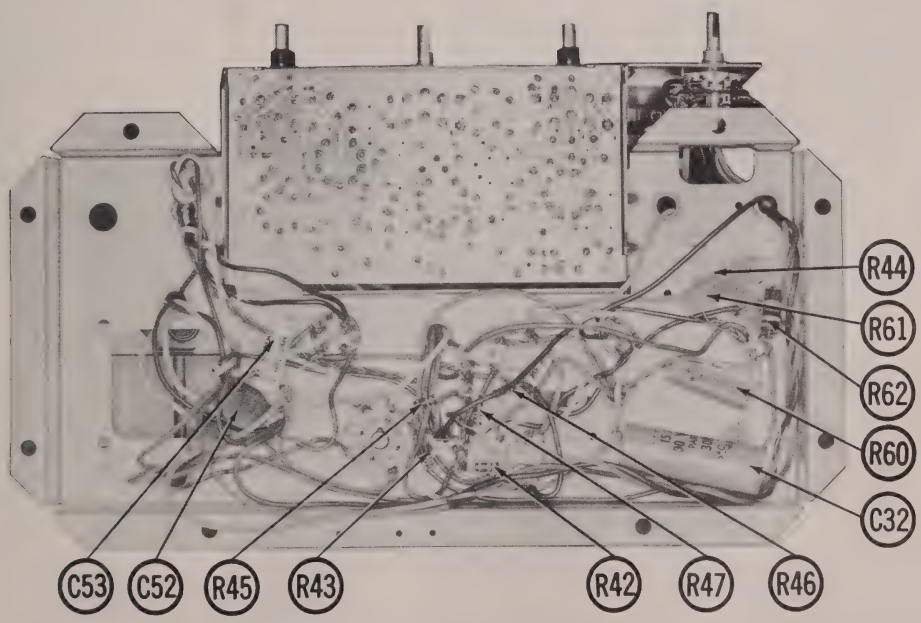
NAME	PART NO.	DESCRIPTION
Dial	77P012	Window
Pointer	45P2451	Dial
Knob	49P332-2	Tuning
Knob	49P332-1	Function
Knob	49P337-2	(Inner) Volume, Tone, Selector
Knob	49P335	(Outer) Volume, Tone, Selector
Knob	39P232	Balance
Cabinet	92X098-4	Blonde, Model BC1098-1
Cabinet	92X098-2	Ebony, Model EC1098-1
Cabinet	92X098-1	Mahogany, MC1098-1
Cabinet	92X098-3	Walnut, WC1098-1
Cabinet	92X111-2	Ebony, Model EC1097-1
Cabinet	92X111-1	Mahogany, Model MC1097-1
Cabinet	92X111-3	Maple, Model PC1097-1
Cabinet	92X111-4	Walnut, Model WC1097-1

WIRING DATA

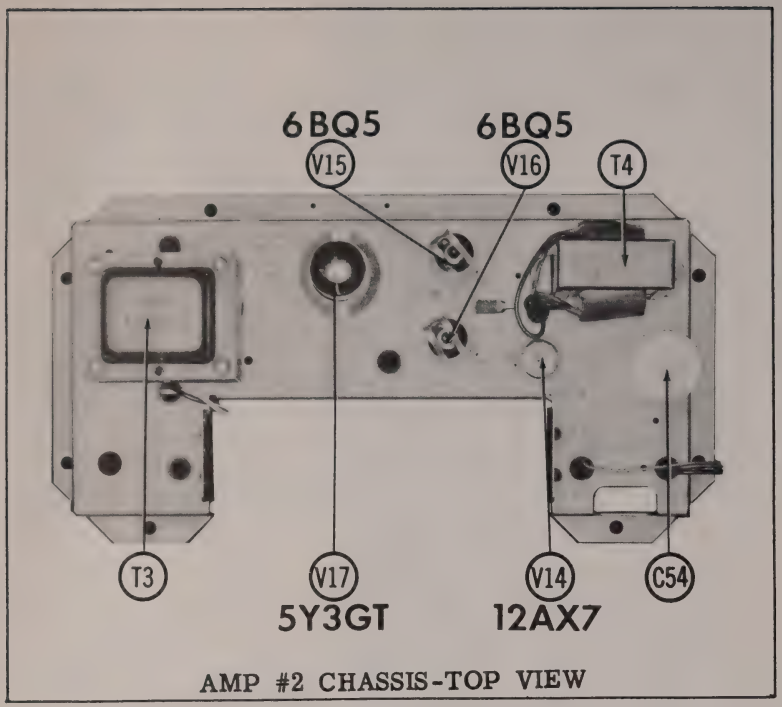
General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors



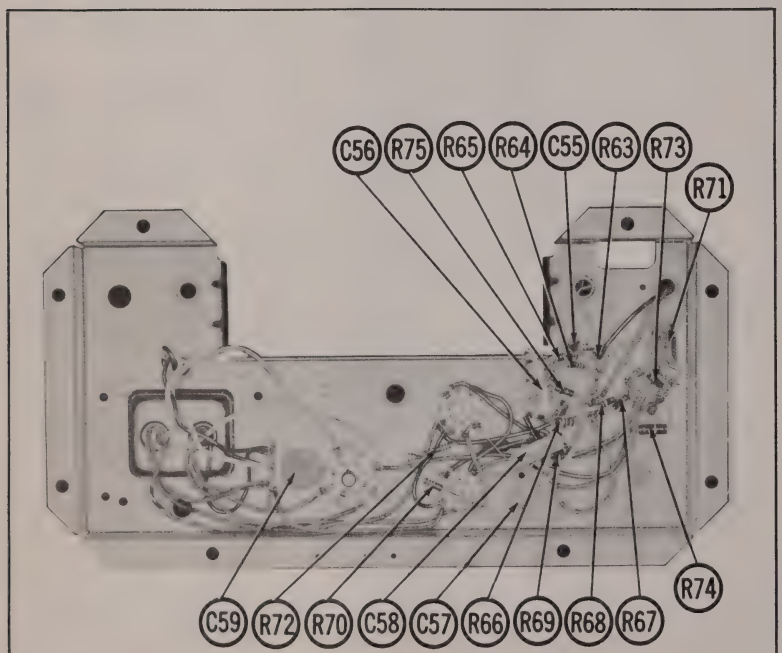
AMP #1 CHASSIS-TOP VIEW



AMP #1 CHASSIS-BOTTOM VIEW



AMP #2 CHASSIS-TOP VIEW



AMP #2 CHASSIS-BOTTOM VIEW

AMP NO.1 PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (◆ GENERAL ELECTRIC)	ITEM No.	USE	TYPE (◆ RAYTHEON ◆ SYLVANIA ◆)
V8	Channel 1 AF Amp.	12AX7	V11	Channel 1 Output	6BQ5
V9	Channel 1 AF Amp. - Phase Inverter	12AX7	V12	Channel 2 AF Amp.	12AX7
			V13	Rectifier	5Y3GT
V10	Channel 1 Output	6BQ5			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA WEBCOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C30A	■35	375	30P306	AFH4-79	D0150	FP421.4	TMQ-4574	TVL-4771	
B	▲35	375			BBR25-25			TVA-1205	
C	▲15	350							
D	25	25							
C31	15	300	30P281	PRS1640	BR1635	TC64	TD-16-350	TVA-1607	
C32	15	400	30P334	PRS1730	BR1645	TC74	TD-16-450	TVA-1708	
C33A	100	25NP	30P379	PRS7340	BR10015	TCN425		TVANS-1207.1*	
B	100	25NP		PRS7340	BR10015	TCN425			

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C34	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	200 N1500 5%	#30P322						
C37	680 N3300 10%	#30P323						
C38	2000 10%		DI-2000		CUB2S2	CCD-202	GP220	10TS-D20
C39	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	50000		BPD-05	DD-503	CUB2S5	IDP-2-503	GP150	5HK-S50
C41	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C42	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C43	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C44	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C45	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C46	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C47	200 N1500 5%	#30P322						
C48	680 N3300 10%	#30P323						
C49	2000 10%		DI-2000		CUB2S2	CCD-202	GP220	10TS-D20
C50	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C51	50000		BPD-05	DD-503	CUB2S5	IDP-2-503	GP150	5HK-S50

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C52	10000 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BL-S10
C53	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50

\# Webcor Part Number.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA WEBCOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R29A	2meg *	1/2	31P159					Level, Channel 1
B	2meg *	1/2						Level, Channel 2
R30A	1meg	1/2	31P160					Bass, Channel 1
B	1meg	1/2						Bass, Channel 2
R31A	1meg	1/2	31P160					Treble, Channel 1
B	1meg	1/2						Treble, Channel 2
R32	75K ♦	2	31P161					Balance

* Taps @ 275K & 600K.
♦ Taps @ 25K & 50K.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R33	100K	
R34	1500Ω	
R35	120K	
R36	22K	
R37	100K	
R38	47K	
R39	6800Ω	
R40	180K	
R41	2700Ω	
R42	470Ω	

ITEM No.	RATING	REMARKS
R43	150K	
R44	135Ω 5W	IRC#PW5-135Ω
R45	82K	
R46	470Ω	
R47	150K	
R48	100K	
R49	1500Ω	
R50	120K	
R51	22K	
R52	100K	

ITEM No.	RATING	REMARKS
R53	47K	
R54	6800Ω	
R55	33K	
R56	470K	
R57	100K	
R58	1000Ω	
R59	100K	
R60	2700Ω 7W	IRC#PW10-2700Ω
R61	1500Ω 5W	IRC#PW5-1500Ω
R62	390Ω 2W	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	WEBCOR PART No.	REPLACEMENT DATA	
K3	Tone Comp.	75mmf, 100mmf, 1100mmf, 2500mmf, 94K, 240K	62P017	Centralab	PC-404
K4	Tone Comp.	75mmf, 100mmf, 1100mmf, 2500mmf, 94K, 240K	62P017	Centralab	PC-404

AMP NO.1 PARTS LIST (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA: WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC. 1	SEC. 2						
T1	117V @ .9A	620VCT @ .110A	5V @ 2A	68P070-3 ①					①Alternate Part #68P070
	SEC. 3	SEC. 4	SEC. 5						
	12.6VCT @ 2.2A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA: WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC.						
T2	6500Ω CT	14-16Ω	67P069-4 ①	A-2904	A-3870	24S11	S-55X	① Alternate Part #67P069

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA: WEBCOR PART No.	QUAM PART No.	NOTES
	SIZE	FIELD	V. C. IMP.			
SP1	6"	PM	6-8Ω	76P100A	6A15RZ8	* Models 4003-1, 4004-1
SP2	3½"	PM	6-8Ω	76P081-1	3A15T	† Model 4003-1
SP3	15"	PM	14-16Ω	76P085	15A1ZI6	♦ Model 4004-1
SP4	6"	PM	6-8Ω	76P100A	6A15RZ8	
SP5	3½"	PM	6-8Ω	76P081-1	3A15T	
SP6	10"	PM	14-16Ω	76P087-2 *	10A6AZ15	
SP7	6"	PM	14-16Ω	76P081-2 †	6A1ZI6	
SP8	3½"	PM	14-16Ω	76P081-2 *	3A15TZ15.5	
	6"	PM	14-16Ω	76P082-2 ♦		

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA: WEBCOR PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		NOTES
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M3	21P700-1 or 21P700-2	21S621-S * or 21S621-SD *	13TB	Not Req.	26S	S1-1 * & S3-3 *	8TA4-S	N-8TA-S *	

MISCELLANEOUS

ITEM No.	PART NAME	WEBCOR PART No.	NOTES
M4	Switch	32P137	Function Selector (Rotary Wafer Type)
M5	Switch	32P133	Changer Off-On (Part of Changer)
M6	Motor		Turntable Drive (Part of Changer)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

AMP NO.2 PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC • RAYTHEON • SYLVANIA)
V14	Channel 2 AF Amp. - Phase Inverter	12AX7
V15	Channel 2 Output	6BQ5
V16	Channel 2 Output	6BQ5
V17	Rectifier	5Y3GT

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT.	REPLACEMENT DATA: WEBCOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C54A	■35	375	30P306	AFH4-79	D0150	FP421.4	TMQ-4574	TVL-4771	
B	▲35	375			BBR25-25			TVA-1205	
C	▲15	350							
D	25	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C55	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C56	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C57	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C58	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C59	10000 1400V		DAC-27	DDI6-103	HVE16S1	16DP-3-103	UAC-110	BL-S10
C60	2mfd 25V		P123ZNN-2.0		WMF1W2E			
C61	2mfd 25V		P123ZNN-2.0		WMF1W2E			
C62	4mfd 25V		P123ZNN-4.0					
C63	2mfd 25V		P123ZNN-2.0		WMF1W2E			

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R63	150K	
R64	180K	
R65	2700Ω	
R66	470K	
R67	100K	

ITEM No.	RATING	REMARKS
R68	100K	
R69	1000Ω	
R70	150K	
R71	135Ω 5W	IRC#PW5-135Ω
R72	150K	

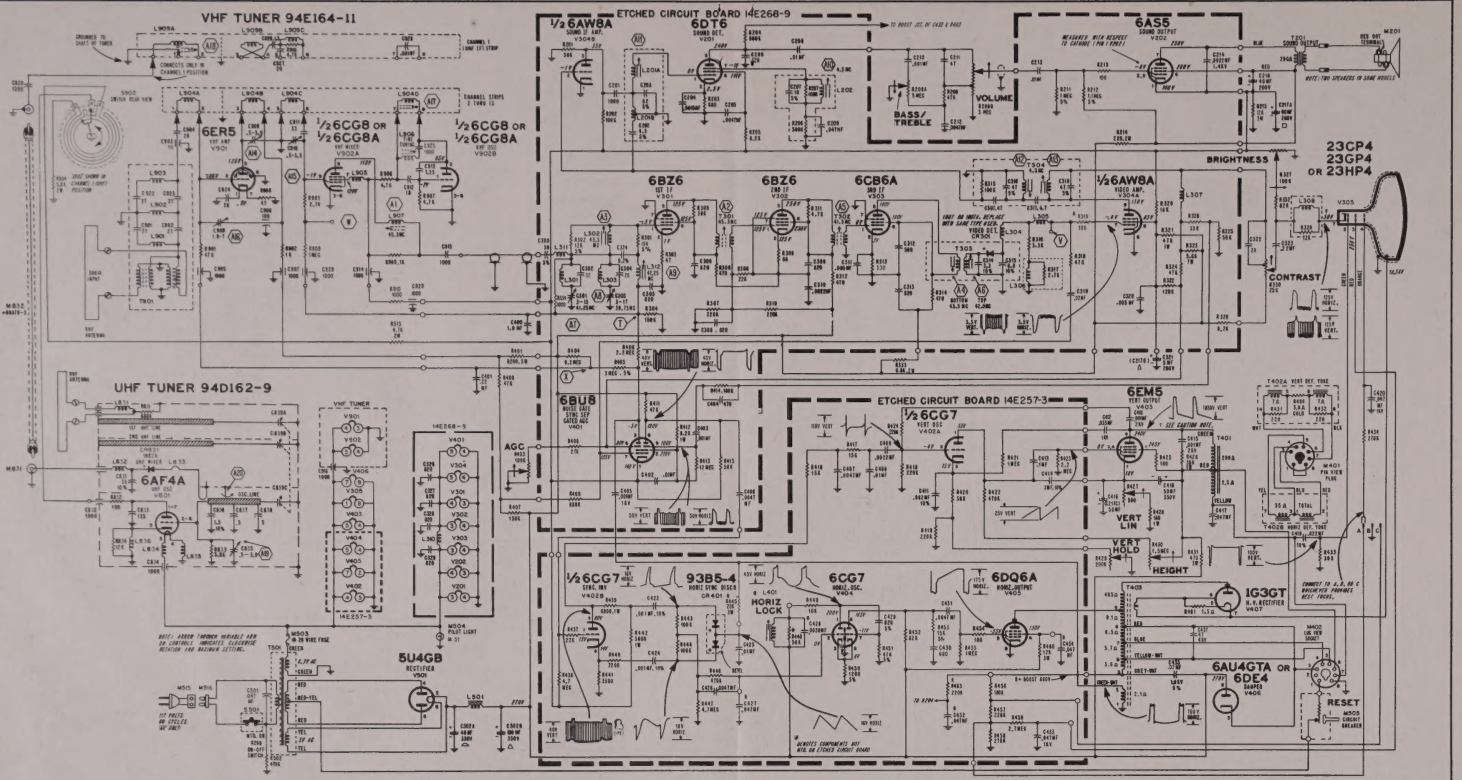
ITEM No.	RATING	REMARKS
R73	22K	
R74	2200Ω 1W	
R75	5.6meg	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA: WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC. 1	SEC. 2						
T3	117V @ .6A	620VCT @ .080A	5V @ 2A	68P069-3 ①					① Alternate Part # 68P069
	SEC. 3	SEC. 4	SEC. 5						
	12.6VCT @ .9A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA: WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC.						
T4	6500Ω CT	14-16Ω	67P069-4 ①	A-2904	A-3870	24S11	S-55X	① Alternate Part #67P069

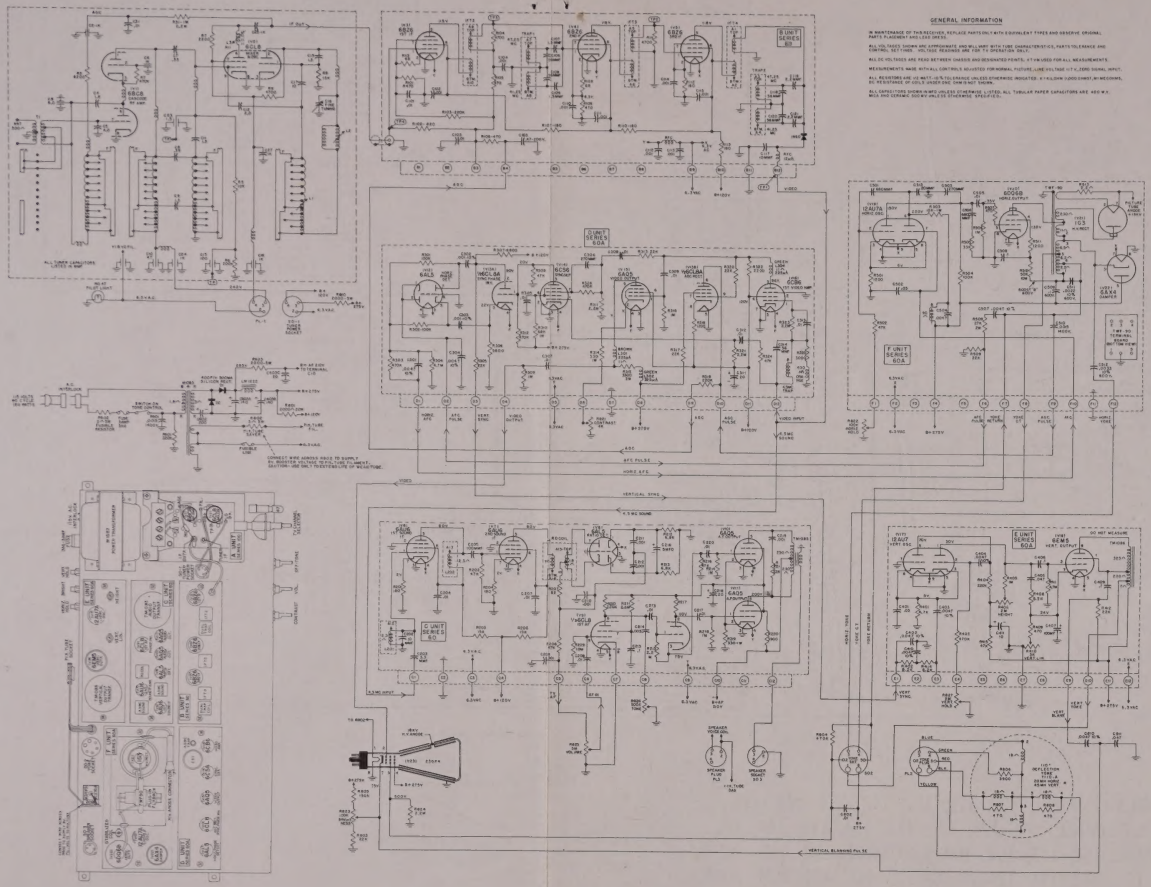


VOLTAGES AND WAVEFORMS

- Line Voltage: 117 volts AC.
- Set Channel Selector on an unused channel. Contrast control fully clockwise; all other controls counterclockwise. Do not disturb **AGC**, and **Horiz. Lock** adjustments.
- Antenna disconnected and terminals shorted together.
- DC voltages measured with VTVM between tube socket terminals and chassis, unless otherwise indicated.
- Voltages marked (*) will vary widely with control settings.
- Waveforms taken with transmitted signal input to television chassis.
- For waveform measurement, all controls set for normal picture.
- Peak-to-peak voltages may vary slightly from those shown.

ADMIRAL MODELS C24M121, 122, 123, 131, 132, 133, 142, 149, 171, 172, 189, C24UM121, 122, 123, 131, 132, 133, 142, 149, 171, 172, 189, L24M151, 152, 153, 161, 169, L24UM151, 152, 153, 161, 169, T24M110, 111, 112, 113, T24UM110, 111, 112, 113, (CH. 20A7, B, 20UA7, B)

Schematic Diagram Courtesy of Admiral Corporation



SETCHELL-CARLSON MODEL 601C (CH. X159)

Schematic Diagram Courtesy of Setchell-Carlson Inc.

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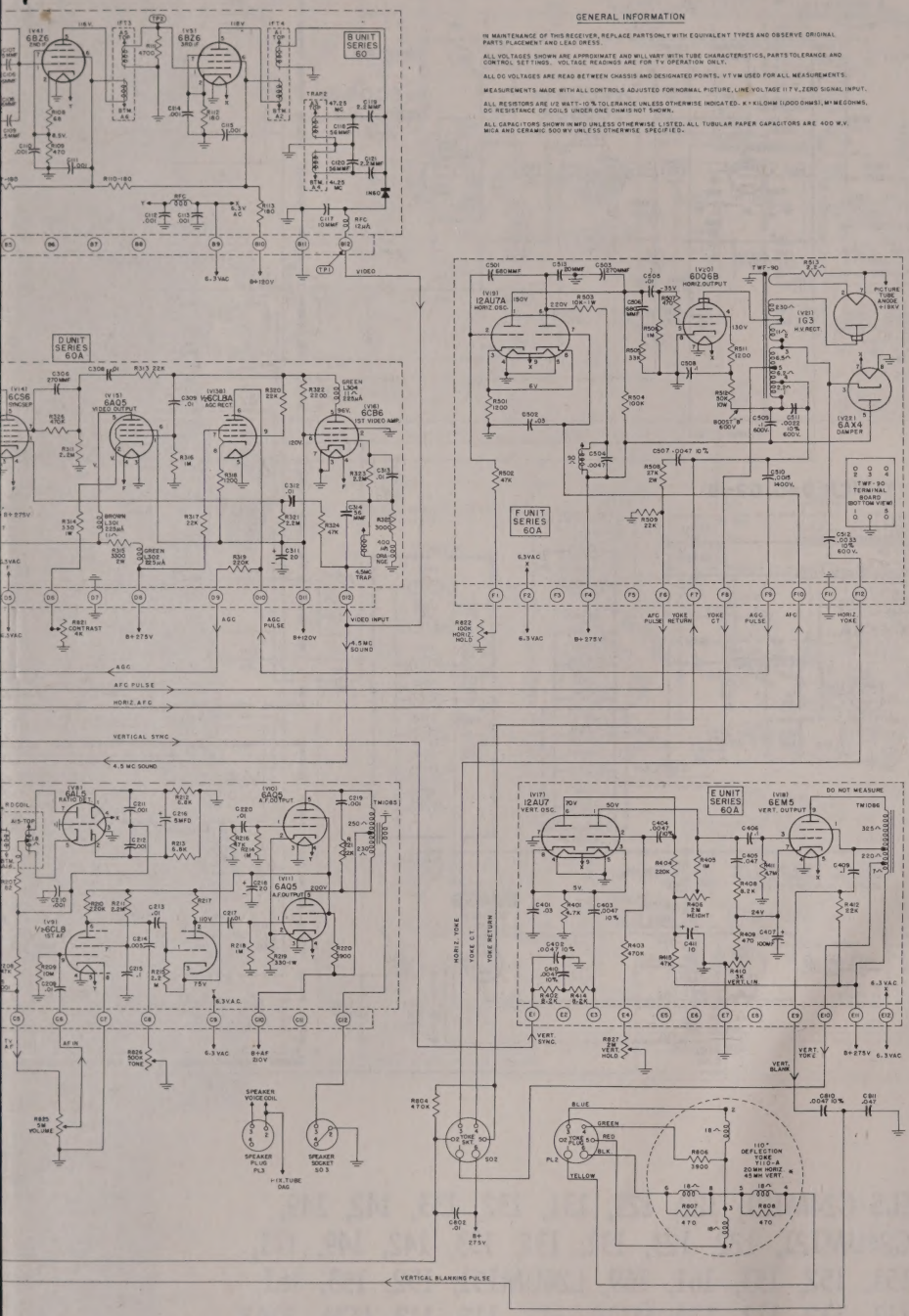
GENERAL INFORMATION
IN MAINTENANCE OF THIS RECEIVER, REPLACE PARTS ONLY WITH EQUIVALENT TYPES AND OBSERVE ORIGINAL PARTS PLACEMENT AND LEAD DRESS.
ALL VOLTAGES SHOWN ARE APPROXIMATE AND WILL VARY WITH TUBE CHARACTERISTICS, PARTS TOLERANCE AND CONTROL SETTINGS. VOLTAGE READINGS ARE FOR TV OPERATION ONLY.
ALL DC VOLTAGES ARE READ BETWEEN CHASSIS AND DESIGNATED POINTS. VTVM USED FOR ALL MEASUREMENTS.
MEASUREMENTS MADE WITH ALL CONTROLS ADJUSTED FOR NORMAL PICTURE, LINE VOLTAGE 117 V., ZERO SIGNAL INPUT.
ALL RESISTORS ARE 1/2 WATT-10 % TOLERANCE UNLESS OTHERWISE INDICATED. K = KILOHM (1,000 OHMS), M = MEGOHMS. DC RESISTANCE OF COILS UNDER ONE OHM IS NOT SHOWN.
ALL CAPACITORS SHOWN IN MFD UNLESS OTHERWISE LISTED. ALL TUBULAR PAPER CAPACITORS ARE 400 W.V. MICA AND CERAMIC 500 WV UNLESS OTHERWISE SPECIFIED.
B UNIT SERIES 60
D UNIT SERIES 60A
F UNIT SERIES 60A
E UNIT SERIES 60A
6BZ6
6BA6
6AU6
6AL5
6AQ5
6CB6
6GD6B
12AU7A
12AU7
6EM5
6AX4
1G3
TWF-90 TERMINAL BOARD (BOTTOM VIEW)
PICTURE TUBE ANODE, 11 KV
DO NOT MEASURE
VIDEO INPUT
4.5MC SOUND
AGC
AFC PULSE
HORIZ. AFC
VERTICAL SYNC.
4.5 MC SOUND
VERTICAL BLANKING PULSE
HORIZ. YOKE
YOKE RETURN
110° DEFLECTION YOKE 9110-A 20 MH HORIZ. 45 MH VERT.
SPEAKER VOICE COIL
SPEAKER PLUG PL3
SPEAKER SOCKET SO 3
H.V. TUBE DAG

Schematic Diagram Courtesy of Setchell-Carlson Inc.